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FIRE ENGINEERING

A Consolidation of
FIRE AND WATER ENGINEERING *and* THE FIRE ENGINEER

SEPTEMBER 5, 1928

Sandy Hook, Connecticut

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For Extinguishing Fires

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Faraday equipment is the product of an up-to-date factory, skillful workmen and a reliable company manufacturing high quality products for almost half a century.

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P.N.I. Boxes are Ideal for Systems of Less Than 20 Boxes

FARADAY Positive-Non-Interfering Type Fire Alarm Boxes are equipped with devices which absolutely prevent "jumbling" of the code-signals should the levers of more than one box be pulled at or about the same time—no possibility of interference between boxes, with consequent loss of signal.

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FIRE ENGINEERING

A Consolidation of FIRE AND WATER ENGINEERING and THE FIRE ENGINEER

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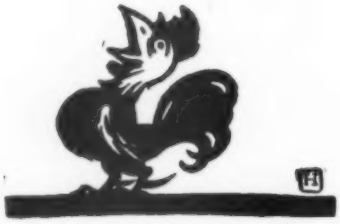

They All Do It!

WE are in full sympathy with Marco Morrow's remarks, reproduced below, and feel confident that most of FIRE ENGINEERING'S readers feel the same way about it:

A hen is not supposed to have
Much common sense or tact,
Yet every time she lays an egg
She cackles forth the fact.

A rooster hasn't got a lot
Of intellect to show,
But none the less most roosters have
Enough good sense to crow.

The mule, the most despised of beasts,
Has a persistent way
Of letting folks know he's around
By his insistent bray.

But man, the greatest masterpiece
That nature could devise,
Will often stop and hesitate
Before he'll advertise.

¶ Well, advertising certainly has its place, and we are glad that so many of the manufacturers in the fire field are learning to use it to better and better advantage, and that our readers are following it so closely.

¶ Verily, the advertising pages are just as important as the editorial, aren't they!

The Publishers

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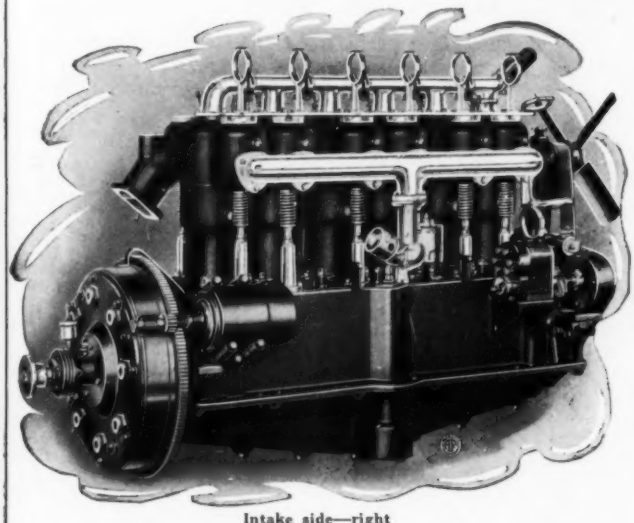
Ahrens-Fox



Intake side—right

Super-Powered Motor

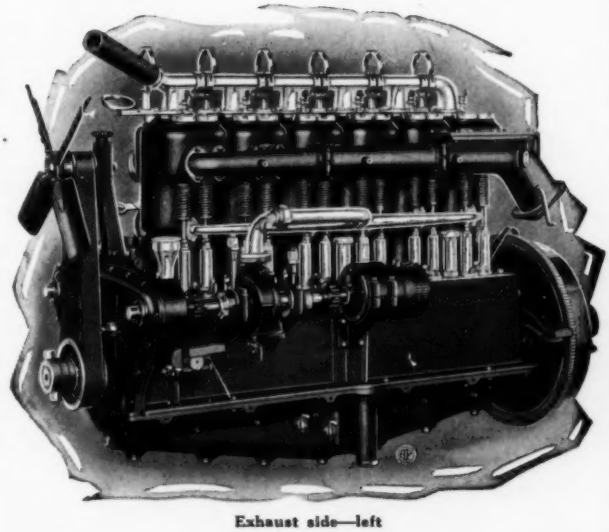
was Designed by Fire Engineers

"IT'S the motor that counts," is a phrase used by nearly all progressive fire officials. They realize that where a long run is called for and where you are forced to deliver hundreds of gallons of water per minute under high pressure—the brunt of the work falls upon the motor. It must not skip or fail—it must deliver.

The close contact of Ahrens-Fox engineers with actual fire service conditions and long experience in designing apparatus to meet these conditions thoroughly qualifies them to furnish municipalities with apparatus equipped with a motor of proven dependability and unquestioned service qualities.

Fire officials who realize the responsibilities of their positions and their duty of protecting the life and property of their town or city as far as humanly possible, know that quality and service are far more important than any other consideration. The cost of your apparatus is measured by service rendered over a long period of years, and not by the initial cost.

Hundreds of municipalities throughout the country who are fortunate in having such officials in charge of their fire departments are now equipped with Ahrens-Fox apparatus. Others are planning to make such purchases in the near future; and if you are interested in up-to-date fire apparatus we shall be glad to send complete information without obligating you in any way.



Exhaust side—left

"Nothing is too good for fire service, and nothing but the best will do."—Ahrens-Fox

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"Builders of Quality Fire Apparatus"

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Fire Chiefs have learned from experience that Darlings deliver a full stream of water instantly, due to the large barrel and simple construction. They never bind, jam or freeze—always on the job.

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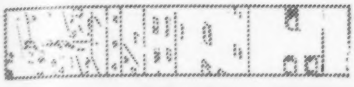
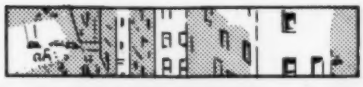
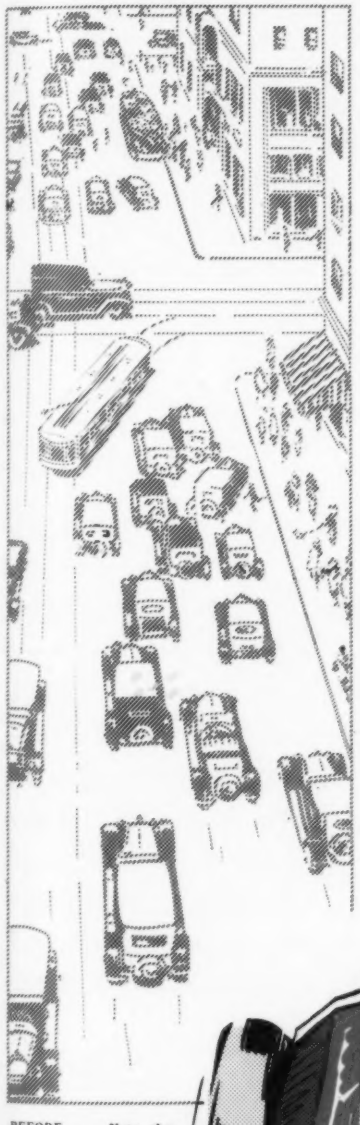
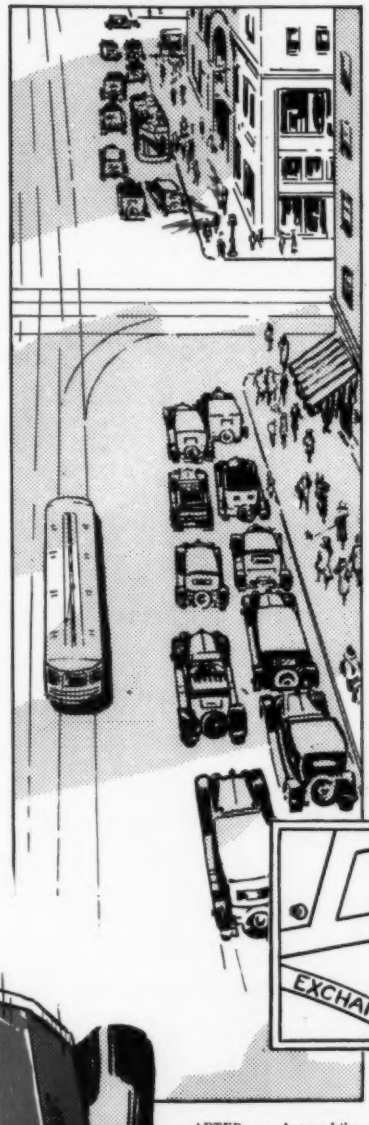




A GREAT DANGER THREATENS





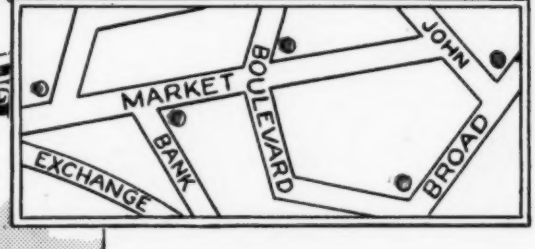
AMERICA'S FIRE FIGHTING FORCES

23,000,000 automobiles crowd our streets today . . . 23,000,000 dangerous obstacles block the way to America's Fires! Yet this enormous figure will increase *by millions* in 1928 . . . and millions more on the way!

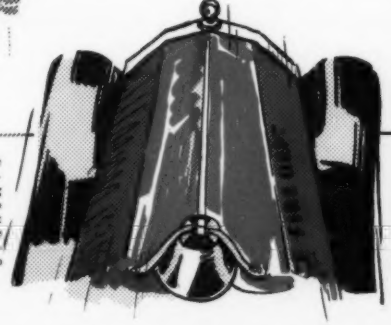
Cities in the future will have two or three street levels to provide for this rapid increase, but meanwhile, *FIRE will not wait!* Relief for this dangerous situation must be had *NOW* . . . for delay in reaching fires means increased losses of lives and property.

Practical, economical, and most effective is the solution devised by our Engineering Department . . . an "*Advance Warning*" Siren-Signal-System that has been *tested* and proved a huge success in several cities. Safety Engineers and City Officials heartily endorsed it . . . many predict that every important city will have this System installed within the next year . . . *so logical* is the solution!

It brings SAFETY to Fire Fighters and perfect PROTECTION for the public. Scientifically planned placement of Sterling Advance Traffic Sirens assures instantaneous response from every automobilist. You should know the full details of this System, and how it will operate in your city. Write to our Engineering Department today and outline your traffic problems for their specific solution. The Sterling Siren Fire Alarm Co., Inc. 61 Allen St., Rochester, N. Y.



Cross Section of a Typical City, showing the scientific placement of *Advance Warning* Siren-Signal-System. Charts for your city's individual requirements prepared by our Engineering Department.

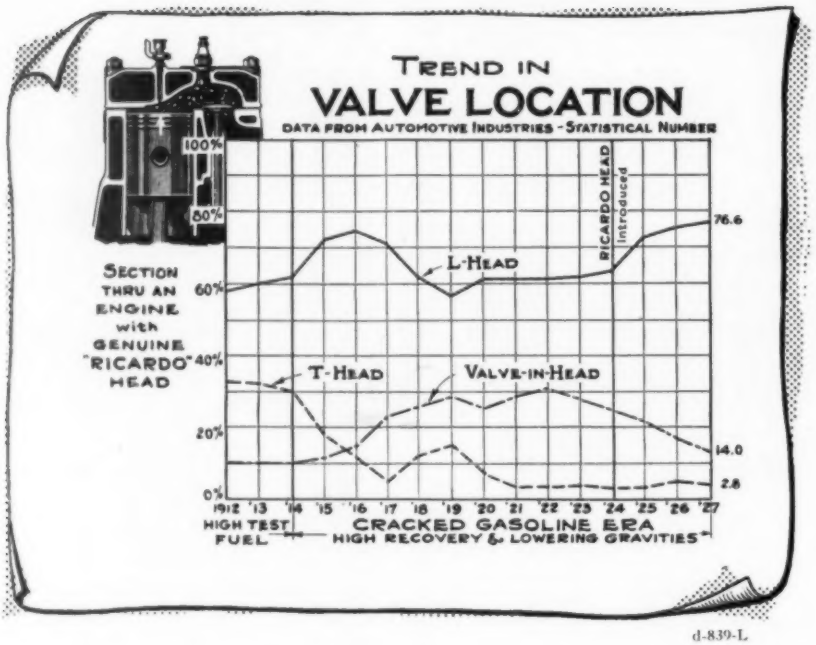


BEFORE . . Note the positions of the automobiles: some blocking others in attempting to park, others turning out and "knocketing" those behind. DANGER threatens Fire Fighters who must pass this traffic.

AFTER . . Automobiles draw up close to curb . . clearing the way for speeding fire apparatus. Every street with all automobiles waiting orderly for the apparatus to pass.

STERLING SIRENS

OLDEST AND LARGEST *EXCLUSIVE* MAKERS OF SIREN SIGNALS



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Engineers for years have recognized the simplicity of the "Ell" head engine and its direct, well-lubricated valve gear. The trend curve shows that during the war, overhead valve engines challenged the existing Ell head type. The pronounced increase in the use of "Ell" heads with a corresponding decrease in overhead valve engines began with the appreciation and wide adoption of the Ricardo Head principle in 1924.

With present day fuels, sound engineering recognizes that the only choice lies between these two engine types and simplicity immediately commends the "Ell head" type. Waukesha Ell Head Engines with genuine "Ricardo" combustion chambers combine high power, simplicity, reliability, efficiency and long life. Write for Bulletin No. 679 describing them.

D-855-L

FIRE EQUIPMENT DIVISION

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Waukesha 956 St. Paul Ave. **Wisconsin**

Eastern Sales Office *Eight W. 40th Street* *New York City*

Shuredry WATERPROOFED Salvage Covers

Wouldn't a reduction of from $25,000 to $50,000 or more in your annual fire-loss report look pretty good to you?

You can accomplish this, and at the same time reduce the insurance rates in your town, through salvage work. A few "SHUREDRY" covers would turn the trick and start the ball rolling.

Write our nearest house for samples and prices.

These pictures were made at the recent Convention of the Southeastern Fire Chiefs Association. They show how a single "SHUREDRY" Salvage Cover, which costs only a few dollars, can be used to save from water damage, a room full of furniture, including rugs and draperies. The circular insert shows how well the "SHUREDRY" goods holds water.

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Manufacturers Since 1870

ATLANTA NEW ORLEANS BROOKLYN ST. LOUIS DALLAS MINNEAPOLIS

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Harrington-Seaberg's New Factory

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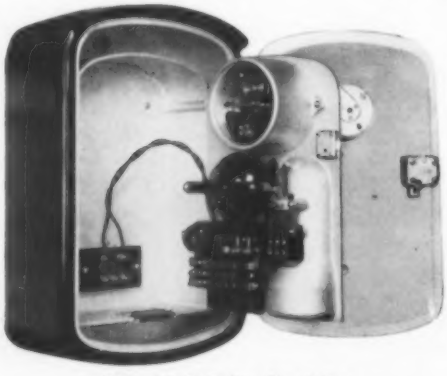
IN MANUFACTURING

FIRE ALARM AND POLICE SIGNAL EQUIPMENT

Recently Harrington-Seaberg Corporation moved their manufacturing facilities, engineering staff and executive offices into their new home—a new, modern factory building. Increased floor space, new machinery, direct shipping facilities and ground for building additional units as required have been provided in this much needed expansion.



RB2—3-Call Police Signal Box

AT THE END OF 7 YEARS

Harrington-Seaberg's growth in seven years of manufacturing Fire Alarm, Police and Traffic Signal Equipment is a stronger endorsement—a better proof of worth of the product than any other evidence that might be presented. During this period of time recognition came, demand increased, production grew, volume multiplied and distribution became national. Installed in hundreds of cities—chosen after cold consideration and comparison—Harrington-Seaberg's Fire Alarm and Police Signal Equipment has met the test of unfailing service.

ACI-Quick Action Fire Alarm Box

ENGINEERING SERVICE

Information concerning the advantages of Harrington-Seaberg products is yours for the asking. H-S Engineers will gladly cooperate with you in planning the best system of Fire Alarm and Police Signal Equipment for your city.

HARRINGTON-SEABERG CORPORATION

Municipal Signal Manufacturers

MOLINE ILLINOIS

FIRE ALARM, POLICE AND TRAFFIC SIGNAL EQUIPMENT

OFFICES IN PRINCIPAL CITIES

FIRE ENGINEERING

(A Consolidation of FIRE AND WATER ENGINEERING and THE FIRE ENGINEER)

The Journal of the Fire Protection Profession

VOLUME LXXXI SEPTEMBER 5, 1928 NUMBER 18

Fire Fighting On Other Side of the World

George F. Cobb Circles the Globe and Visits Many Foreign Fire Departments—Interesting Details of Work of These Brigades

By HARRY BELKNAP

GEORGE F. COBB, of Boston, Mass., traffic manager for the Fire Chief's Club of Massachusetts and the New England Association of Fire Chiefs, returned a short time ago from a trip around the world on which he visited many foreign fire brigades and obtained much interesting data on European and Oriental methods of fire fighting. In some communities he found that it was customary for the chief officer to dismiss the corps with a bugle call; in others there was a roll call made both before and after going to the fire. He brought back with him a motion picture record of his trip with films showing many fire brigades at drill with close-up views of the apparatus and equipment.

George F. Cobb
Traffic Manager, N. E. A. F. C.

Military discipline was found to prevail with British officers in charge of most of the departments. In Egypt special equipment has been devised to rescue persons from wells and collapsed buildings. Most of the motor pumping engines are of small size because the absence of frame construction and the limited size of the buildings obviate the necessity for such powerful streams of water as are used in American cities.

Mr. Cobb, since his return home in the early summer, has received copies of the annual reports of various fire brigades which he visited and extracts from these records make interesting reading. The latest report that has reached him is that of the Singapore Brigade.

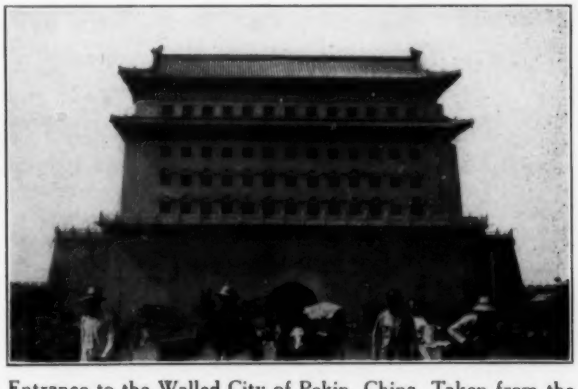
Mr. Cobb, accompanied by his wife, left New York, on January 7, 1928, on the steamship "Franconia," of the Cunard Line. The first stop was at Madeira where Chief Frederico St. Rodrigue entertained Mr. Cobb and showed him the two new Ford motor trucks which have replaced the former hand drawn equipment and hose reels that were in use at the time of Mr. Cobb's first visit a few years ago.

Many Foreign Fire Departments Visited

Among the places where an inspection was made of the fire fighting apparatus were Nice, Cairo, Bombay, Colombo, Singapore, Hong Kong, Peking, Keigo in Korea, formerly known as Seoul, Osaka, Tokio, and Kyota in Japan.

In Cairo, Chief Jones exhibited a special device that he had invented for pulling bodies out of sewers. In Bombay Chief Thomas C. Greenop did the honors for the visitors, and at Colombo in Ceylon in the absence of Chief P. H. Lanaway, who was abroad on leave of absence, Chief Officer Tka Gaffoor showed the equipment and demonstrated the methods used by the brigade.

In Hong Kong, China, there are two separate fire brigades, the International Corps and the French Volunteers. The International department consists of 650 men and has 63 pieces of apparatus. Every five years the officers, who are Englishmen, are given eight months' leave. Captain H. G. Reed was in charge in the absence of Chief Dyson. Third Officer B. M. Hunting and Station Officer W. A. G. Price, of the Hong Kong Brigade, visited America this summer on their way to England on leave and were entertained by Mr. Cobb in Boston and in Brookline, Mass.



Entrance to the Walled City of Pekin, China, Taken from the American Legation

At Keigo, Mr. Cobb met Chief K. Oguna of the Keigo Fire Brigade and in Japan he met Chiefs T. Takata and S. Harada, R. Yoshini, assistant engineer of the

Osaka Brigade and T. Yamamoto, first officer; and Tasuke Takano, chief of the fire brigade and of the Metropolitan police board in Tokio.

Japanese Fire Officers Wear Swords

In Kyota, Japan, Mr. Cobb witnessed a fire in a two story frame hotel and was impressed by the fact that the Japanese officers wore swords while engaged in fighting the flames. A bugle call was sounded as a signal to make up the apparatus after the fire, the men lined up in military fashion, saluted the chief, and were dismissed. Later the officers took photographs of the ruins which pictures are preserved as a part of the official record of the fire.

Mr. and Mrs. Cobb arrived in San Francisco, Cal., on April 17 and were met at the pier by Chief Murphy with a number of other chiefs and officials. A trip was made to Los Angeles where Chief Scott entertained Mr. and Mrs. Cobb who came east in time for the convention of the New England Association of Fire Chiefs at Burlington, Vt., last June.

Some interesting cards were brought back by Mr. Cobb from the various chiefs that he met. The one from the Madeira chief reads as follows: "Associacao Humanitaria Dos Bombeiros Voluntarios Do Funchal,

Mr. and Mrs. George F. Cobb About to Enjoy an Elephant Ride

Gabinete Do Comando, Frederico St. Rodrigue, Funchal, Madeira."

Fine Condition of Honolulu Department

From the annual report of the Honolulu Fire Department it appears that during the year ending December 31, 1928, there were 321 alarms of fire of which 209 were by telephone, 93 by Gamewell box, and 19 were still or verbal alarms.

The total loss for the year was $74,838.17 including a loss of $12,010 incurred in a fire at Watertown out of reach of the department. A new fire station was built at Waikiki and new hose and equipment purchased.

C. H. Thurston, the late chief engineer of the Honolulu Fire Department, made the following recommendations in his last report: acquisition of a lot in the Kakaako district and the erection thereon of a fire station suitable for the housing of an aerial hook and ladder truck and an engine company; erection of a new two story building in the rear of the central station to be used as a work-shop and storeroom; erection of new fire stations in the Nuuanu and Manoa districts and purchase of equipment for same; also the purchase and installation of a private telephone system between fire stations; more fire alarm boxes, and fire hydrants. Mr. Cobb was shown some very fine bungalow fire stations which have been finished recently.

Fire Prevention in Singapore

Fire prevention seems to be having a beneficial effect away out in Singapore for the annual report of the fire brigade for the year 1927 shows that the number of calls received was 85, being a decrease of 27 from the number of the previous year. The total loss on assessed property within the municipal limits was estimated at $22,723, a decrease of $74,126 from the previous year. This is the lowest fire loss since 1912.

Supt. H. E. Stevens mentions in his report that " The Gamewell fire alarm installation continued to give satisfactory service throughout the year and 12 new boxes were added to the circuits, making the total number of alarm points 33."

The equipment consists of 6 petrol motor fire engines of an average capacity of 500 g. p. m., one motor turntable water tower escape, one motor tender with complete first aid equipment and searchlights, 3 trailer pumps, two 50 ft. Ajax escapes, 6 Ajax ladders, one four unit Safoam battery, one 34 gal. foam extinguisher mounted on 2 wheeled carriage, 45 chemical extinguishers (CO_2 and foam type) of 2 gal. capacity, 5 chemical extinguishers of one gal. capacity, 4 chemical entinguishers of ½ gal. capacity.

Extensions to the central fire station were completed and negotiations made for the purchase of land for a sub-station for the Geylang district and plans are underway for the establishment of a sub-station in the Pasir Panjang district which is rapidly growing.

There are no less than 15 nationalities represented in the personnel of the headquarters station. Supt. H. E. Stevens is in command, A. Newberry is second officer, J. D. Shaw is third officer, and A. Platt is fourth officer. Seah Keok Seng is clerk and cashier and Sim Tiam Hwee is assistant clerk and cashier.

Many False Alarms in Far Off Bombay

Thomas C. Greenop has been chief officer of the fire brigade of Bombay, India, for 27 years. The following interesting data is taken from his report for the year 1926–27:

"The number of calls to fires or supposed fires totalled 467 as against 443 the previous year and resulted in 252 fires, 125 false alarms, 6 calls to fallen buildings, and one to a fire outside the jurisdiction of Bombay.

"Compared with last year the number of fires shows an increase of 28. Thirty of the 125 false alarms were returned as malicious and 15, it is presumed, were given with good intent and 80 were caused by electrical defects mostly during the heavy rains. It is unsatisfactory to note that during the last few months several attempts have been made to hoax the brigade by means of false telephone calls. On each occasion when appliances responded a false telephone number had either been given, the call disclaimed, or the premises closed. Attempts to discover the offenders have been unsuccessful.

"One hundred and forty-seven fires were extinguished by the brigade and 105 before our arrival. Only three serious fires occurred during the year.

"The water supply throughout the year has been satisfactory and the attendance of the water department prompt. The approximate quantity of water used at fires was 8,616 tons, 5,664 of which were drawn from mains and 2,952 from sea, tanks, and wells. Four persons lost their lives as a result of fires during the year.

"Seventy per cent of the total number of calls during the year were received through the fire alarm system. The total number of alarms now installed within the city and island is 140, four new alarms having been recently established. Six arrests were made for malicious interference with alarms, resulting in five prosecutions.

"One Leyland 300-400 gallon motor pump with first aid appliances and 35 ft. extension ladder were delivered during the

(*Continued on page* 780)

How to Get Fire Department Publicity

Up to Fire Chief to Acquaint Public With Hazards in City—Newspaper Reporters Should Be Given Interesting Facts from Surveys*

By LESLIE PEAT, Newspaper Editor, Lakewood, Ohio†

FROM the public's point of view, it is the business of every fire chief to keep his community interested in the policies and achievements of his department. Chiefs throughout the country who have chalked up enviable records of performance for their departments know that public interest is the basic essential to progress. As long as Citizen John Smith is interested in the fire department and as long as he feels that the department is progressive, you may count on him for any reasonable bond issue and you have his support for increased operating appropriations.

But what is still more important, fire chiefs can enlist the active day-by-day support of Citizen John Smith in fire prevention measures, and this is just as much the business of the citizen as of the fire department. Under the chief, inspectors check up on fire hazards. They call around the city and make their reports, and in turn keep the state fire marshal's office informed. But the continued fight against fire dangers is a job which must have the attention and interest of every citizen in the community.

Real News Lost Because of Lack of Chief's Cooperation

The tragic, the unusual, the scourge of fire—these are the elements that make news. These the reporters of your local paper will cover automatically. The news of the day is made up of carelessness and blunders. But real news is being missed and filed away among dusty records of yesteryear, because the fire chiefs are not interested enough to sit down with a reporter from their local papers and go over with him the latest report of the National Board of Fire Underwriters and explain to him that mass of mystifying figures which means the saving or the destruction of property.

No chief should have the poor judgment to criticize news reports that tell of accidents if he is unwilling to acquaint the news gatherers of his program to prevent fires. Fire prevention can be made as interesting and far more constructive than a story of a big blaze. And I am willing to take the chance of being branded a "sidewalk chief" to tell you gentlemen a few things about your own business.

There isn't a chief in the state of Ohio that is not interested in some fire prevention program. He may have read the account of some recent fire—a bad oil-tank blaze, for instance—that might easily have been prevented. He looks about him and sees the need of more rigid inspection in that class of hazard in his own city. He orders a check-up—and nine times out of ten he files away the reports. Or perhaps he reads of a type of frame fire trap which has cost the lives of a score of employees in a neighboring state. He investigates his own firetraps—and that's that. He has only gone part of the way toward being an efficient fire chief. He has failed to be the statesman he should be. He has double-crossed Citizen John Smith because he failed to give his inspection and his own reports the kind of publicity it should have had.

Interesting Data Should Be Furnished by Chief

We newspaper men have a lot to learn. And when it comes to fire-prevention and fire-fighting, we must turn to you to learn it. But that same day we have the courthouse beat to cover and the police beat, and a ball game; so we don't look you up and go through your files, and so we miss some good stories for our readers. It is the live and wide-awake chief who offers to the reporters interesting data for publicity for his department and, what is more important, publicity for fire prevention.

The fact that newspapers the country over print so little about fire prevention and the elimination of fire hazards, but use top-head stories of fire losses, is a clear indictment against the fire chiefs of the country. I never want to hear a chief tell me that the papers are unfair until I know whether he has tried to cooperate in giving the reporters the material concerning fire prevention and other constructive measures of the department. If he hasn't taken the matter up himself and treated it seriously with his own staff, he is "kidding" himself and missing the biggest factor in a better fire prevention rating—and that is, public sympathy in his program of constructive work.

A lot of your brother chiefs at the head of police de-

*Abstract of paper presented at annual convention of Ohio Fire Chiefs in Marion, Ohio.

† Mr. Peat has been newspaper reporter and editor for the past fifteen years. He has developed publicity programs used to win support for fire department bond issues. For the past four years he was editor of the Lakewood Post. He is now secretary of the Lakewood Board of Trade and editor and manager of the business men's weekly newspaper of Lakewood.

"WE newspaper men have a lot to learn. And when it comes to fire-prevention and fire-fighting, we must turn to you to learn it. But that same day we have the courthouse beat to cover, the police beat, and a ball game; so we don't look you up and go through your files, and so we miss some good stories for our readers. It is the wide-awake chief who offers to the reporters interesting data for publicity for his department and for fire prevention."

partments have beaten you to the punch with a little psychology. As soon as an epidemic of second-story work breaks loose, the police chief tells the reporter that he's going to make a drive on crooks. Headlines blare out the crusade against criminals and the city reads with bated breath what Police Chief Jones says about this and that, and they give him a hand. He is up and doing; he is on the job—and the brave police department is the talk of the town.

But who of you has tried to work out a crusade against hazards without just as great success? Lay your plans to keep a rigid inspection of certain hazards in your town; keep the reporters of your papers posted as to what's going on; show the citizens of your town that you are on the job. And when some of the death-traps burn up you can say, "I told you so!" and the public will know you did. Get the people of your town in this frame of mind, and the fight against fires is well started.

The "Why" of Fire Department Publicity

That is the "why" of fire department publicity. Fire publicity opens the mind of Citizen John Smith to one of the simplest forms of economy—elimination of waste. He sees the picture from the other side, and instead of thinking of the firemen as a bunch of bums, he sees them as a group of men who are helping him save his home from fires. With this psychology planted firmly in the minds of your citizens, go to them and ask for money for the better equipment you need, and you'll get it.

Remember that most newspapers are in the business to make money, and only a very few can be stampeded into giving publicity; so you cannot expect too great results the first month you try and you will not be disappointed in the space your department gets if you will give it a reasonable amount of attention. You may have some local municipal administrative policy to contend with, but if the mayor or safety director is consulted first, it won't be long before constructive news about your department finds its frequent way into the newspaper columns.

Odd Tower Protects New York's Subway Cars

At 180th street, at the Bronx storage yards of New York's subway cars, there is an odd looking tower which projects above the train platform. The structure is of steel about twenty feet high with platforms large enough to hold a man and double nozzled hose pipe. The nozzles, so mounted, are used to protect the subway cars stored in the yards. The elevated nozzles spray a radius of two hundred feet. The system so described has been in use for the past twenty-five years and has proved effective a number of times.

Prevention of Waste and Saving of Life

Fire fighting is not my business—and I have a respect for people who mind their own business. But I am a fire fan. I believe that the fire departments of the world as public institutions have brought about more economy, have achieved a greater prevention of waste and a bigger protection of life and limb than any other municipal establishment. And as every fire chief here knows, fire fighting is becoming less and less an administrative problem as compared with the problem of fire prevention.

Equipment manufacturers throughout the country are with you. They have developed apparatus that saves man power and with practical fire fighters they have devised equipment that speeds up fire fighting. But the field of fire prevention is educational. It is up to the chief himself to work out the recommendations of the Ohio Inspection Bureau and the National Board of Fire Underwriters, and too often he has no support from the municipal building department or the police department in enforcing fire hazard ordinances. He must keep forever before the public the slogan, *"Prevent Fires!"* and he must watch every opportunity to get that message across to the people of his town through his local newspapers. Citizen John Smith will make his fire prevention program successful only if the chief gets his story across to Citizen John Smith.

Real Publicity Has Been Missed

Dig out some of the technical reports that have been made on your municipality by the Ohio Bureau or the National Board. See for yourself what you have missed in real publicity by not having called a reporter in and gone over the figures with him. In such reports you will find recommendations which, if followed, will increase your grading and reduce the fire insurance rate of your city. Pick out the points which seem to you the most immediately necessary for consideration; go over them with your mayor, and outline a crusade against some particular group of hazards. Show the papers that you mean business and they will be for you. It means good reading for Citizen John Smith and this kind of action means good publicity for your city.

Then take the time to go over the details of your plan with the reporters; remember that they don't know what it's all about unless you tell them yourself, and they must understand it thoroughly if they are to write their stories intelligently. Invite them to go out on inspection trips. Try to get photographs of condemned structures and dangerous hazards. Enlist the cooperation of the chamber of commerce or the board of trade in your town and get public sentiment behind a progressive plan of fire prevention.

An excellent source of publicity can be developed through your chamber of commerce if a good committee on fire prevention is appointed. In making this suggestion to the president of the chamber, the chief should have in mind several men whom he thinks will devote sufficient time to the job to make it successful. With

(*Continued on page 784*)

Forethought Versus Fire Trucks

Instructing Workmen in Fire Safety Might Have Saved Large Garage and Hotel Building—Painter Lets Fire Out of Paint Shop

THIS article of the series on Administration is of particular interest for it illustrates well the hazard of having uninstructed or thoughtless workmen in charge of hazardous processes. In this case the opening of tin clad fire doors in paint shop enclosure permitted fire to leave the paint shop and spread through a large auto repair shop, eventually involving a four-story hotel building alongside.

The fire described herein occurred in a southern city of approximately 35,0000 population.

The water supply of this city is good, there being almost an unlimited supply at a gravity pressure of 40 lbs. in the mains.

The fire department consists of four engine companies, one ladder company and one combination ladder and chemical company.

Engine Co. No. 1 is equipped with a 750 gal. triple combination; Engine Co. No. 2, 700 gal. triple combination; Engine Co. of No. 3, 500 gal. triple combination; Engine Co. No. 4, 500 gal. triple combination; Ladder Co. No. 1, aerial ladder truck; Ladder and Chemical Co., a city service truck with two 60-gal. chemical tanks.

Response to Alarms

First alarm calls out Engine Companies Nos. 1 and 3 and Truck Co. No. 1, while a general alarm brings out the balance of the apparatus; Engine Co. Nos. 2 and 4 and the Ladder and Chemical Co.

Description of Property Involved

The diagram herewith shows a layout of the property involved as well as the property exposed to the fire.

The garage building, in which the fire originated was a one-story brick structure with wooden roof, covered with tin, and painted. The roof girders were of steel but the superstructure supporting the arched roof was of timber. As shown in the diagram, the garage building was divided into five rooms: at the front part of the building was a stock room with offices on a balcony above. Alongside the stock room was the auto showroom. Separating these two rooms from the main part of the shop was a frame partition.

To the rear of the garage was a paint shop of about 50′ x 50′ in size enclosed in a brick partition and fitted with two doors, one a self-closing swinging door and the other a hand operated sliding door of tin clad, wood construction. The machine shop was separated from the repair shop by a frame partition, as was also the battery room.

Directly north of the garage, and adjoining it, was an old four-story hotel of brick and wood joist construction, with windows on the top two floors overlooking the garage. To the south was a two-story brick building used on the ground floor as a bowling and billiard hall with lodge rooms above.

Other exposures, as well as location of hydrants, are shown on the sketch.

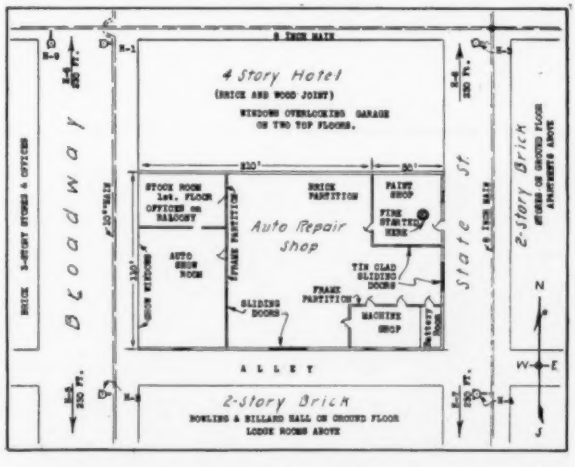
The Fire

The fire started around 2 A.M. on a Saturday night when the repair shop was well filled with vehicles. A workman was in the paint shop fixing up a paint job for a customer who was to call for it on Sunday morning. He was using an electrically-driven paint sprayer and as near as could be learned, the flexible electric cord attached to it broke, and the resulting arc ignited fumes in the paint shop. The workman was badly burned, and fled from the room. The night man in the repair shop grabbed a forty-gal. portable chemical engine and wheeled it up to the paint shop, opening the sliding tin clad door in order to get good range on the fire. He used the tank for a few minutes but found the fire was getting too hot, and was coming back out on him, so he dropped the chemical hose and rushed to the telephone sending in a still alarm.

Engine Co. No. 1 and Ladder Truck No. 1 were immediately dispatched to the fire, arriving within three minutes of the time the alarm was received.

Upon arrival the fire was still largely confined to the paint shop but was coming out of the sliding door and creeping up toward the ceiling.

Engine Co. No. 1 took hydrant No. 2 and stretched a single line through the front entrance of the garage and opened up as soon as they were within range of the paint shop. They were able to cut off the fire burning



around the door of the paint shop and were working up closer toward it when they discovered, after about five minutes operation, the room above burning. Evidently the fire in the paint shop had set fire to the roof and from there the fire began to spread out over the repair shop.

Attention was thereupon directed to this point and in the meantime the heat of the fire in the paint shop set fire to the frame partition of the machine shop.

Several automobiles in the immediate vicinity of the machine shop began to burn. Fearing that some of the gas tanks would explode, the captain in charge of the Engine Company on the still alarm ordered the line withdrawn and re-stretched up the alley to the rear entrance of the garage. In the meantime he sent in a box alarm bringing out Engine Co. No. 3. Before the arrival of Engine Co. No. 3 a second line was stretched from Engine Co. No. 1, operating through the alley door of the repair shop. Upon opening this door it was found that quite a number of cars in the auto

repair shop had taken fire. The roof overhead was burning briskly and dense smoke was coming from the fire among the cars. One line operated from this alley door while the other operated from the door at the rear of the garage on State Street, but no headway was made.

Upon the arrival of Engine Co. No. 3 this engine took hydrant No. 3 and stretched in a single line in the rear of the garage.

Noting the seriousness of the fire the Captain transmitted a general alarm bringing out Engine Cos. Nos. 2 and 4 and the Ladder and Chemical Co. At this time the Chief reached the scene of the fire and took charge.

Engine Co. No. 3 was placed at hydrant No. 1 and a single line stretched to the auto show room to operate on the fire in the repair shop.

Engine Co. No. 4 was placed at hydrant No. 9 and a single line stretched to the top of the stock room to operate along the roof of the auto repair shop.

The lines operated in this position for a short while until, all of a sudden, the roof of the repair shop fell through.

A wave of intense heat swept up the face of the four-story hotel and despite the frantic efforts of the department to prevent the fire from entering this building, the fire got into the windows on both the third and fourth floors.

From this point on the fire increased in intensity, and the department, under command of the Chief, endeavored to isolate the fire in the auto repair shop alone. In this they were not successful, for the four-story hotel soon was involved from top to bottom. However, the fire department prevented loss of life by getting the people out of the hotel in a hurry and at the same time covered the buildings across the alley and across State Street from the fire.

As it was, the garage and the four-story hotel were completely levelled.

It may be said to the credit of the department, that it did good work in confining the fire to the one block, in view of the serious start it had secured.

The Editor's ideas on the handling of this fire will be given in the next issue of this journal.

Example of Modern Film Vault Design in San Francisco

Specially designed concrete fire-proof vaults for the storage of motion picture film is in use by the Blache Film Laboratories in San Francisco. The vault is absolutely fire proof and is provided with two fire doors. There is an air vent in the ceiling so that in case of fire in the vault, gases will pass up through the opening and will not spread to other rooms. The vault is also equipped with automatic sprinklers operating at twenty-five pounds water pressure.

C. W. GEIGER.

CONSTANT VIGILANCE OFFSETS FIRES BEFORE THEY OCCUR

Loss in Business Far More Important Than Damage Resulting from Factory Fire—Constant Inspection and Sprinklers of Help

By J. F. WARREN

District Manager, Inspection Department, Associated Factory Mutual Fire Insurance Companies, Cleveland, O.*

ALTHOUGH fire prevention work is done partly to obtain the lowest possible insurance rate, nevertheless an additional reason, and sometimes the principal one, is to prevent the interruption of business by fire.

For example, when inspectors visited a knitting mill to investigate a fire which had damaged the dyehouse and shut down the plant, the chief concern of the owner was not how soon the loss would be settled, nor how much money he would collect; but reaching into his desk, he drew forth a file of papers and holding them up said, "This is what hurts—thousands of dollars worth of orders from my very best customers that cannot be filled." That man was ready to do anything within reason to prevent similar fires in the future.

Although private fire protection work in industrial plants is largely from selfish motives, as I have indicated, yet it does supplement the work of the public departments; and prevents or controls many dangerous and difficult fires which would otherwise occur.

Years ago New England cotton mills were considered such hazardous risks that they were almost uninsurable, until a group of manufacturers formed a Factory Mutual Insurance Company, for the primary object of preventing loss by fire. The payment of losses was a secondary and incidental object.

The fire prevention methods adopted by this association of mill men proved to be so successful that the average net cost of insurance for protected manufacturing plants has decreased from about eighty cents per hundred dollars which was the rate when the Factory Mutual Companies were first organized, to only four to six cents per hundred dollars at the present time. In other words, manufacturing buildings with their tremendous values, large areas and many industrial fire hazards, have become through the adoption of the recognized methods of fire protection, better fire risks than the houses we live in, which pay a rate of twice as much as a sprinklered industrial plant, and far better than the churches we attend (or stay away from), and the school houses for our children, which pay ten times as much insurance rate as a protected industrial plant.

Let us now consider briefly some of the fundamental principles which enable industrial plants, in spite of their many fire hazards, to have such a low loss ratio. First of all, there is the constant endeavor to prevent fires.

Not all fire causes are so determined and eliminated. The explosions and fires which occur in japan drying and baking ovens are not, as commonly supposed, due to the method of heating. They result from the presence in the oven of an explosive mixture of inflammable vapors from the japan and the air used for ventilation. This explosive mixture may become ignited from several sources. It is easy to understand how a spark, a flame, or red hot metal within the oven can explode the vapors, but it is not generally known that heat alone is sufficient. Some japan thinners will ignite at a temperature below the source of heat used in these ovens, and therefore whatever method of heating is used the price of safety in a japan oven is ventilation sufficient at all times to dilute the vapors and prevent the formation of an explosive mixture within the oven. Not only should a generous factor of safety for worse conditions be provided, but it should be impossible to operate the heating system without having adequate ventilation.

In our investigation of this problem, it was first necessary to invent and develop an apparatus for measuring the proportion

(*Continued on page* 784)

*Abstract of paper read at convention of Ohio Fire Chiefs, Marion, Ohio.

WITH THE EDITOR

Calling Upon Firemen in Emergencies

In two recent notable instances the fire department has been called upon to jump into the breach and perform rescue work which had no possible reference to fire duty, for in neither case was there any blaze to contend with.

The first of these was the recent smash-up in the New York subway, when eighteen lives were lost and nearly one hundred people injured. The first call put through was for the fire department, and the most notable work of rescue was done by the members thereof.

The other instance—or rather instances, for there were several—was during the recent flood in the Ellenville area of Rondout Creek, in New York State. In one case a chief of the fire department, with another man in a department car, saw the wall of water approaching, and turned the car to escape being engulfed. While racing with the oncoming flood, they passed a woman and child in a stalled automobile, and at the risk of their lives, stopped and pulled the two into their car. So close was their call, that a moment after dashing across a bridge to safety, the bridge was washed away by the flood. In another instance in the same flood, a children's camp was completely surrounded by the rushing waters, and a ladder truck of the Kingston Fire Department was called into service. All of the children were brought to safety across the long ladders, assisted by the firemen.

All of which illustrates the fact that wherever humanitarian work is to be done the fire department is one of the first to be called, and be it said there is yet to be recorded an instance where the men of this service have balked in performing any heroic task required of them.

Airplanes New Problem in Fire Prevention

Progress always brings with it its penalties. One of these has just been emphasized by a committee named in California to consider the protection of the forests and fields of that state from fire. This committee has included in its recommendations to the Governor of the state that all airplanes be required to post notices to passengers warning them not to throw lighted cigars, cigarettes or matches from the planes. The state law forbids anyone doing this from any moving vehicle, and the committee calls attention to the fact that this ordinance applies equally to airplanes as it does to automobiles or any other conveyance. Furthermore, there exists a greater hazard in the case of the careless airplane passenger, as the plane will traverse much more inaccessible and sparsely populated regions than can the automobile, where forest fires have a far greater opportunity to spread and wreak havoc than where well defined roadways cut the surrounding woodland.

But it must also be borne in mind, with the added increase in travel through the air which is inevitable, that the hazards arising from such carelessness on the part of passengers will by no means be confined to forests and remote parts of the country districts. A thoughtlessly thrown lighted cigar or cigarette may just as easily fall upon a wooden shingle roof, on a pile of wood in a lumber yard, in a window, or in many other situations fraught with hazardous conditions. The result may very easily be a bad fire or even a conflagration in a city as well as an extensive forest fire.

It is therefore quite evident that especial stress should be laid upon the care which passengers, or others who use airplanes should exercise in matters of fire precautions. Fire chiefs in whose jurisdiction flying fields are situated might well take up this as a special feature of their work, warning the operators of machines which fly over cities or towns to exercise care themselves and caution their passengers to do likewise, and to post notices in their planes asking the riders not to throw any fire producing objects from the moving machines.

If state ordinances do not provide penalties for such acts of carelessness, firemen's associations would do well to see that laws covering the hazard are passed, so as to act as a deterrent to those indifferent to the safety of others. Now is the time to take such action, so that, as the use of the airplane becomes more general, it will be thoroughly understood that carelessness in matters of fire will meet due punishment.

The Part of Youth in Fire Fighting

The wise chief now recognizes the part youth must play in matters of fire prevention and fire fighting. The majority have taken cognizance of this fact, and in various ways utilized it in their daily routine. This has been done in various ways. One of these has been the use of the Boy Scout organization in matters firemanic. The scout can assist the regular firemen in many ways. He can watch for and report violations of the laws of fire prevention and fire protection. He can set the example to his elders in the observance of the rules of neatness, cleanliness and the elimination of all fire hazards. He can patrol the fire lines after they have been established, and help in many other ways which will relieve the regular department of many an onerous task.

As a rule the scoutmaster will be only too glad to cooperate with the chief in all matters of this kind which will have a tendency to develop a spirit of manliness and self reliance on the part of the Scout. He will, in fact, welcome such an opportunity to bring out the best qualities among the youths under his charge. Taking advantage of this fact, and of the enthusiasm for service of the average Scout, the body of youths comprising this circle will prove an invaluable addition to any fire department, as an auxiliary force.

Another means that the chief can use to further the ends of fire safety is the public school. Here again, the chief can find, if he will but look for it, mighty possibilities in the line of fire prevention. The youth of today is the mature man or woman of tomorrow. What he learns as a youngster will remain with him throughout his life, and will bear a mighty influence upon it. If he is taught in early youth to respect and abide by the regulations made by any community to insure immunity from fire, the observance of such rules will become a second nature with him. With the maturing of a large number of persons in a community in whom fire prevention has been so taught as to become a part of the very fibre of their being, there will be little need for strict enforcement of fire prevention measures. The observance of such rules will come as a matter of course. The whole question is largely one of education, and if this is consistently followed out, fire prevention should be easy of accomplishment. If the subject is neglected by the schools the community is bound to be the sufferer in the long run, and the fire losses will mount in proportion. A community of fire-careful people will naturally have a low percentage of loss and the one best way to insure this desirable condition is to teach the children the value of care and the exercise of common sense in matters of fire prevention.

Gasoline B'aze Endangers Montezuma, Ia.

Departments from six Iowa towns were called to fight a fire in Montezuma, Ia., started by the explosion of six oil and gasoline tanks. For a time, the entire town was considered to be in danger. The loss has been estimated at $30,000.

Connecticut Firemen Meet in Convention

Captain William P. Carleton of Engine Company No. 15, of New Haven, Connecticut, was elected president of the Connecticut State Firemen's Association at the forty-fifth annual convention of this association held at Dorscht Hall, Crown street, New Haven, Conn., on August 14-15. Captain Carleton's election was an elevation from the position of first vice-president, to replace James J. McCoy of Waterbury, who retired from the presidency following the custom in the association.

Capt. Wm. P. Carleton, New Haven, Pres. Conn. Firemen's Assn.

The office of first vice-president was filled by the election of William J. Crockett of South Manchester. David W. Harford of South Norwalk was re-elected secretary; Michael T. Souney of New Britain was re-elected treasurer and the Rev. Father M. J. Ryan of Meriden was again chosen state chaplain. County vice-presidents elected were as follows: Charles Berry of Meriden, New Haven county; Edward T. Prior of Plainville, Hartford county; Chief Victor Veit of Stamford, Fairfield county; Calvin E. Edmunds of New London, New London county; Chief George S. Pitt of Middletown, Middlesex county; George R. Milne of Rockville, Tolland county; Frederick Dumas of Putnam, Windham county and John H. Griffin of Norfolk, Litchfield county.

Many interesting matters pertaining to the various fire departments throughout the state were brought up. A communication from the National Firemen's Association of Washington, D. C., asking that Connecticut firemen interest themselves in the creation of a national home for firemen was read and brought about considerable interest. It was voted to print the request in the records of the convention and to act upon it at the 1929 convention.

Between 400 and 500 of the total 13,000 membership attended. Mayor Thomas A. Tulley welcomed them to New Haven.

Fifty members of the Fire Chief's Club, which meets each year with the state association, also elected officers for the year. They were: Ex-Chief Rufus Fancher of New Haven, re-elected president; Chief George S. Pitt of Middletown, re-elected first vice-president; Ex-Chief Daniel E. Johnson of Bridgeport, re-elected second vice-president and D. B. Mercer of Westville was again elected secretary-treasurer. The 1929 convention will be held at East Hartford.

T. F. MAGNER.

New York Volunteers Hold Convention

The three-day annual convention of the Southwestern New York Firemen's Association was held at Gowanda, N. Y. Several thousand firemen attended.

Mayor Schwab, of Buffalo, as well as other officials spoke at the annual banquet. At the business meeting the following officers were chosen: Milton C. Guggenheimer of Buffalo, president; Charles J. Shults of Gowanda, financial secretary, holding over; E. C. Green of Allegheny, treasurer; John B. Walters of Angola, sergeant-at-arms; Herman Wagner of Ebenezer, assistant sergeant-at-arms; H. W. Funk of Richburg, vice president for Allegheny County; Fred Weiss of Hamburg, vice president for Erie County; Fred E. Place of Gowanda, vice president for Cattaraugus County; L. W. Freeman of Scio, director for Allegheny County; Stanley Sobocinski of North Collins, director for Erie County; Frank Halstead, director for Cattaraugus County; Theodore Burns of Westfield, director for Chautauqua County.

Richter Heads Cumberland Firemen—George Richter, Chambersburg, Pa., has been elected president of the Cumberland Valley Volunteer Firemen's Association at the convention held in Hanover, Pa. C. L. Jacobs, Waynesboro, Pa., was re-elected secretary and W. H. Richter, Chambersburg was re-elected treasurer.

Questions and Answers

NOTE—Readers are invited to send in questions, which will be answered in the order received. Names are omitted from questions unless otherwise specified.

Conduct at Funerals

To the Editor:

Would you kindly give us the proper procedure for uniformed firemen attending funeral services in either a chapel or church service where all members attend in a body.

Should the members proceed to their seats with their caps on and wait for the command to uncover, or should the cap be removed and placed over the left breast on entering the funeral chapel?

Very truly yours,

A. C. D.

Answer: The rules and regulations of the New York Fire Department, which are generally accepted as the last word in fire department regulations, make no specific reference to that point. Captain John J. McCarthy of the New York Fire Department who wrote the new rules two years ago states that ordinary courtesy and deportment require a fireman to uncover as he crosses the threshold of the edifice and to carry the cap over the left breast until he arrives at his seat in the pew.

Leave of Absence

To the Editor:

Kindly answer the following question in an early issue of FIRE ENGINEERING.

Can a 33 hour leave of absence without pay be granted to a member of the uniformed force, such leave including a 24 hour and a 9 hour tour of duty.

"A" says no.

"B" says yes.

Constant Reader,
New York City.

Answer: Capt. John J. McCarthy of the Division of Places of Public Assembly, New York Fire Department, answers the question as follows:

"The inquiry concerning a special leave of absence for 33 hours is answered in the affirmative. Reason: 4th paragraph of Section 231, Rules and Regulations of the N. Y. Fire Department, 1926, which reads:

"A special leave of absence (without pay) shall be applied for in writing to the Chief of Department at least 24 hours in advance of the morning roll call of the date on which the leave is desired. Special leave shall be for a period of not less than 6 hours, and shall be for a definite continuous period of time."

Hydraulics in Massachusetts Examination

To The Editor:

My position in the.....fire department is a private. The department is growing every year, that is, it has grown to a fair size. When I was appointed first a call fireman then a permanent one, there were only thirty permanent men. Today we have 102, but promotion is very slow in a small department. In order for one to advance it would be necessary for him to top the list. I have quite a few books and study about fifteen minutes a day. Just at present I am on fire prevention inspecting three days a week, staying the other three nights in the station.

There has been only one examination in eleven years for lieutenants in the department and that was a year ago. I tried it with sixty others, finishing eleventh, with a mark of 78.04%. I didn't understand the hydraulic question, thereby losing 4%.

The question was:

Question A. How would you find pressure in square inches due to head.

Question B. How would you find height of standpipe, if pressure in square inches was given at the outlet.

This same question was asked in an examination in the city of ---. This is how the three men at the top of the list got it. They had nine of the ten questions asked in our examination, by applying to the different departments in a radius of ten miles of here; at least one of the questions was asked in each department.

They also asked a question pertaining to celluloid which was a violation of the state law. I told the examiner about that, and the answer I got was that there are many violations of the state laws. I am fairly well versed on fire fighting of different kinds, but the hydraulics I have difficulty in mastering.

Cordially yours,

J. E. B.

Answer: Hydraulics as now employed in the fire department examinations is not what might be termed a difficult subject. The hardest mathematical operation used in hydraulics is square root, and this is something that can be secured from almost any arithmetic book. One advantage of hydraulics is that it does not change. It is like other mathematical subjects that it is an exact science, and is not influenced by changes in methods of fire fighting and industrial progress as other subjects covered by promotional examinations are.

The only suggestion that can be made regarding the study of hydraulics is to keep plugging at it. Once the various steps become familiar, the entire difficulty of the subject vanishes.

Regarding the promotional questions you refer to, in the first one what is meant is the determination of pressure in square inches, where the elevation of water producing this pressure is known. Suppose, for example, water in a standpipe system reaches a point 100 feet about an outlet. This 100-feet strip creates a certain pressure, in square inches, at that outlet. To find what this pressure is, it is only necessary to multiply elevation (or depth) of water by 0.434, giving, in this case 43.4 lb. per square inch which is the pressure created by the 100-foot head or elevation of water. The same method applies for all other elevations, it being only necessary to multiply the elevation or head by .434 to get the pressure in square inches.

In your second question you are merely reversing this procedure. The pressure in pounds per square inch is given at the outlet. You want to find what the height or head of the water is above this outlet. In this case you can secure it in one of two ways: Divide the pressure in pounds per square inch by 0.434 and you have the elevation or head of water which produces it. The other method is to multiply the pressure in pounds per square inch by 2.304 and you get a similar figure. Either method is correct, for both of them are based upon the same fundamental calculation.

Capacity of Pumper

To The Editor:

A thousand gallon pumper of the rotary type was recently placed in service in this city, and is to be used for supplying the water tower. I have been placed in

charge of the pumper. I would appreciate very much your assistance if you will answer the following questions through the columns in an early issue.

The fire engine manufacturers give a contract on these pumpers like this: at 120 lbs. net pump pressure, discharge shall be 1,000 gals. per minute; at 200 lbs. net pump pressure, 500 gals. per minute; at 250 lbs. net pump pressure, 333 gals. per minute.

If you place two lines of 3-inch hose on the pumper, siamesed to a 2-inch smooth bore tip and accelerate motor to give its pump speed in high pump gear you get 1,000 gals. per minute at 100 lbs. engine pressure.

Question: If you add two more 3-inch lengths your pump pressure increases to 120 lbs. pressure but you are still getting your 1,000 gals. per minute at about 79 lbs. nozzle pressure, and so on like the following:

Two parallel 50-foot lines of 3-inch hose, 2-inch tip, 79 lbs. nozzle pressure.

Two 100-foot parallel of 3-inch hose siamesed to a 2-inch tip, 79 lbs. nozzle pressure, engine pressure being 120 lbs.

Two parallel 150-foot lines of 3-inch hose siamesed to a 2-inch tip, 79 lbs. nozzle pressure, 140 lbs. engine pressure.

Two parallel 200-foot lines of 3-inch hose siamesed into a 2-inch nozzle, 79 lbs. nozzle pressure, 160 lbs. engine pressure.

Two parallel 250-foot lines of 3-inch hose siamesed into a 2-inch tip, 79 lbs. nozzle pressure, 180 lbs. engine pressure, and so on until the pressure gauge reaches its limit or 300 lbs. engine pressure but still discharging 1,000 gals. per minute under the stated conditions. We use two lines of 3-inch hose 500 feet length as the longest ordinarily employed. Please advice me if I am correct in this, or as others say, that a 1,000 gallon pumper cannot deliver that amount of water at 250 lbs. engine pressure, layout remaining the same as stated.

I say the layout must be changed, drawing, for instance, smaller tips or gates throttled before the gallons change.

Here is my chart which I have plotted.

	Tower Height	Engine Pressure	Tower Height	Engine Pressure	N.P.	Gallon Flow
2— 50 foot lines	35 feet	121 lbs.	65 feet	142 lbs.	79	1066
2—100 foot lines	35 feet	133 lbs.	65 feet	155 lbs.	79	1066
2—150 foot lines	35 feet	146 lbs.	65 feet	167 lbs.	79	1066
2—200 foot lines	35 feet	158 lbs.	65 feet	180 lbs.	79	1066
2—250 foot lines	35 feet	170 lbs.	65 feet	192 lbs.	79	1066
2—300 foot lines		182 lbs.	65 feet	204 lbs.	79	1066
2—350 foot lines	35 feet	195 lbs.	65 feet	217 lbs.	79	1066
2—400 foot lines	35 feet	207 lbs.	65 feet	224 lbs.	79	1066
2—450 foot lines		220 lbs.	65 feet	242 lbs.	79	1066
2—500 foot lines	35 feet	231 lbs.	65 feet	254 lbs.	79	1066

All lines are 3-inch hose with 2-inch tip nozzle pressure 79 lbs. Flow 1,066 gallons per minute. Allowing 15 lbs. friction loss in tower and 30 lbs. back pressure at 65 ft., one-half of 15 lbs. friction loss and back pressure at 35 feet.

Answer: Referring to the first part of your question, where you give specific layouts each having 79 lbs. nozzle pressure, the engine pressures were to be somewhat different than those you state.

With two parallel 50 foot lines, the engine pressure would be 99.3 lbs.

With 100 foot lines, engine pressure would be 112.1 lbs.

With 150 foot lines, engine pressure 124 lbs.; with 200 foot lines, engine pressure 136 lbs.; with 250 foot lines, engine pressure 149 lbs.

But forgetting these differences in engine pressure as actually calculated, the point which you are uncertain about is whether or not you would be able to get the same nozzle discharge, or flow, with increasing length of lines and increasing engine pressure.

The answer to this question is no.

What limits the discharge from any motor pumping engine is the power of the motor itself. If the motor had unlimited power, and the pumps would stand the additional strain, there would be no limit to the pressure at which the engine could discharge its maximum rate of capacity.

However, as the engine has only a certain amount of horse power available, and as each increasing pressure (the discharge remaining the same) means an increase in horse power, you reach the point above which you can not maintain the same discharge with an increased pressure.

The fact that the engine makers say you can get but 333 gallons at an engine pressure of 250 lbs. shows the above condition to exist.

A rough rule for determining how much water you can get at any specific engine pressure from your pump is as follows: multiply the rated capacity by your pressure, 120 lbs., and divide by whatever engine pressure you wish to employ. The answer will be the approximate discharge at this other pressure in gallons per minute.

For instance, suppose you wanted to find out approximately how much water the pump would discharge at 180 lbs. engine pressure.

You would multiply the rated discharge, 1,000 gallons, by the rated pressure, 120 lbs., and divide the product (120,000) by 180 lbs. The answer would be 666 gallons per minute approximate.

In actual service, however, the engine will not discharge quite as much at the higher pressure that this rule will show. But the rule is commonly used in making rough calculations.

Referring to your table of engine pressures you assume the same discharge at various pressures from 121 lbs. to 231. This, of course, is wrong. At 121 lbs. it would probably discharge the 1,000 gallons per minute, while at 185 lbs. it would discharge about one-half this amount (approximate). At 254 lbs. engine pressure it would discharge approximately one-third of the 1,000 gallons per minute.

Calculating Factors

To The Editor:

Will you please inform me of the method employed in obtaining the factors, other than those for a single line of two and one-half inch hose, in the "Table of Values of K."

Very truly yours,
C. W. M.

Answer: The method which will give approximate results is as follows:

K (for 2½ inch hose) equals dxdxdxd divided by 10. In this formula d is the diameter of the nozzle in inches.

For finding the factor for any other size of hose than 2½ inch, we divide the value of K so found (or taken from the table) by the conversion factor for changing the given size of hose to 2½ inch.

For example, K for 1⅛ inch nozzle on 2½ inch hose is 0.167. If you wanted to find the value of K for 1⅛ inch nozzle on 3 inch hose, we would divide 0.167 by the factor for changing 3 inch hose to 2½ inch, which is 2.6.

Then 0.167 divided by 2.6 gives 0.064, the value of K for 3 inch hose and a 1⅛ inch nozzle. The table values would show this figure as 0.062, but it must be remembered that the above formula gives only approximate results whereas the table results are developed from experimental figures showing the actual nozzle or engine pressures in specific layouts.

Salvage Corps Men to Meet with Chiefs

As is the custom, the annual convention of the Salvage Corps Officers Association will be held in Philadelphia, Pa., at the same time as the convention of the International Association of Fire Chiefs in October. The meetings will be held at Patrol Headquarters with Superintendent Harry Hoffman acting as host. The program is as follows:

Address of Welcome, Harry Hoffman, superintendent, Philadelphia Patrol.

Salvage of Stock in Basements, James O'Donnell, superintendent, St. Louis Patrol.

Salvage Work Being Performed by Fire Departments, Chief Blake, Rockford, Ill.

Salvage Corps Book of Rules, Chief Frank C. McAuliffe, Chicago Patrol.

Recent Advances in Salvage Methods, James O. Schwank, chief of the New York Patrol.

Work of the Salvage Committee of the National Fire Protection Association, John Ashmead, chairman of the committee.

Pumper Delivered to Bloomington, Ill.—An Ahrens-Fox 100-gallon pumper has been delivered to Bloomington, Ill.

MANY CRAZED INMATES ESCAPE DURING STATE ASYLUM FIRE

Superintendent of Institution Ordered Release of Patients, Some With Record for Past Killings—Number of Staff Rescued Just in Time

LIGHTNING is believed to have caused the fire that destroyed the Administration Building of the Central State Hospital, an institution for the insane, at Nashville, Tenn. The fire was discovered by a watchman who was curious to know why the sky was brightly illuminated. He noticed that the top of a cupola was burning. A telephone call was sent in.

Chief F. B. Moore

The Administration Building is of brick construction with a slate roof. The central portion of the building is four stories high. An east and west wing adjoining the main building housed the patients.

The first call brought First Assistant Chief I. W. Moore and an 800-gallon pumper. Water was pumped from a nearby lake and from hydrants. The second alarm brought Chief F. B. Moore, a 1,000-gallon pumper and an aerial ladder. A number of police responded to guard the mentally diseased people.

An order was issued to release the 1,272 patients confined in the various rooms. Included in this crowd were eleven criminally insane men. The throng left the building, some laughing, some screaming and some crying. They scattered about the lawn, many scantily clad, to watch the flames. Most of them wandered off the grounds not knowing where they were going. County and city officials patroled the roads and rounded up a large number of the wanderers.

Fire companies made the run from Nashville, nine miles away. As one company rolled into the grounds, one patient reached for the machine and swung himself aboard. Firemen recognized that no layman could make so graceful a swing. The man proved to be a former member of the Nashville Fire Department who broke under the strain of fire-fighting and was sent to the hospital for treatment.

As soon as danger from fire was believed to be over, the patients were ordered and carried back to their respective quarters. Estimates of the loss varied from $200,000 to $250,000.

Chief F. B. Moore, who had charge of the firemen, succeeds Chief Weaver as head of the Nashville Fire Department.

He was born on February 16, 1872, and was first appointed a member of the fire department on October 17, 1892. Chief Moore served until September 1, 1899, and then resigned from the service. On September 24, 1901, he rejoined the department and has been a member ever since.

In 1911 he was advanced to lieutenant and in 1916 he was promoted to captain. Mr. Moore was made assistant chief in 1920 and on March 1, 1928, he was made head of the department.

Marshalltown May Increase Wages

Firemen in Marshalltown, Ia., are hoping that the long sought for wage increase will materialize. The department has reduced its annual expenditures, and it is expected that the amount saved will help finance the salary increase.

Some time ago the south side fire station was closed and two firemen were laid off. This made a saving of $200 a month. At the same time, two captains were reduced in rank thus saving an additional twenty dollars a month. Besides this, there has been a saving in fuel, light and telephone service.

Firemen now receive one hundred dollars a month and have not received an increase during the past seven years. It is said that the council is favorable to the increase, but the puzzle is how will the increase be financed.

Mineola, N. Y., Purchases Pumper—A 1,000-gallon Seagrave pumper has been purchased by Mineola, L. I., N. Y.

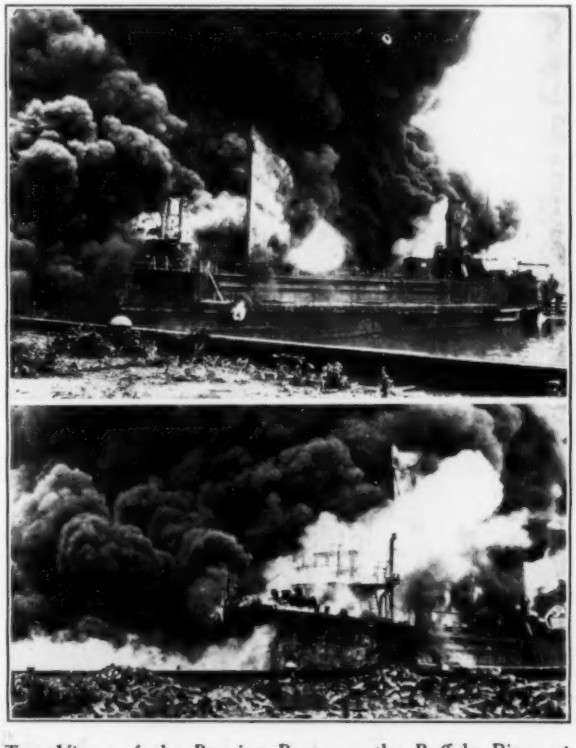
THREE BOATS DESTROYED BY DRIFTING RIVER BARGE AFIRE

Fireman on Firetug Lost When He Jumped Into River—Exact Cause of Fire Not Known—Bridge and Shipping Placed in Jeopardy

A MEMBER of the firetug W. S. Grattan was lost when the crew jumped into the Buffalo River, twenty-eight others were injured, and three ships were burned at Buffalo, N. Y., following an explosion on a barge. The fire lasted for seventeen hours before it was finally extinguished.

The exact cause of the explosion is not known. The barge was loaded with crude oil and a steam tug "Gerald B. Russell" was along side. It is probable that gas seeping out from the barge during the loading process was ignited from boilers on the tug, or the explosion may have been started by static electricity.

Two engine companies and a battalion chief responded in accordance with a telephone alarm. When the men arrived at the pier, they found the fire on the opposite side of the river. Water from the streams was not effective and foam was not available. Later two foam streams were used with but little effect—one generator was brought from the Standard Oil Company plant by a fireboat. No water was poured into the hold



Two Views of the Burning Boats on the Buffalo River at Buffalo, N. Y.

where the oil was stored. It was decided to let the boat burn to the water's edge, although some difficulty was expected when the boat sank.

The Buffalo River has little or no current except after heavy rains or to compensate for any change in level in Lake Erie. Up to 8 a. m., there was no danger as the barge was well fastened with cables. About 11 a. m. the cables gave way and the barge drifted slowly up stream in spite of efforts to prevent this. The barge drifted against the Standard Oil Company docks and then against the tanker "B. B. McColl." A line was attached to the tanker to move her to a safer position but the boat was grounded at the stem. The firetug Grattan was unsuccessful in moving the tanker. While at this task, the burning barge came in contact with both boats.

Tanks on the tanker were empty but nevertheless there was an explosion. The crew on the firetug and other firemen who were on board were forced to jump into the river. The men were

hampered by their heavy coats and boots. One fireman was lost.

The barge then drifted under the D. L. & W. Railroad bridge across the river. Near this point, cables were stretched across the river, below the water's surface, to prevent the drifting craft from reaching the bridge. The barge sank about 6:30 p. m. and oil burned on the water. About six streams soon extinguished the blaze although the bridge was slightly damaged. Two alarms and five special calls were sent in. The department was hampered by the inaccessability to the boats and the distance to the hydrants on the south side of the river. All but three of the twelve hydrants used were six hundred feet distant. Water was supplied at thirty pounds pressure and twenty-four streams were used. In addition, deck pipes on the fireboat were brought into action, and foam from the Standard Oil Company plant was used. Deputy Chief John J. Crotty was in charge at the fire.

Various estimates have been made of the damage. Fire department officials believe that the damage will not exceed $700,000.

This fire is believed to be the worst river fire in the past twenty-five years.

Engine 12, a new piece of apparatus, was destroyed and its engineer was badly burned when he refused to desert his post. Many lengths of hose were destroyed.

WHAT'S BURNING

THE following list includes fires of $25,000 loss and over in the United States and Canada, for the periods designated in the headings. These figures, compiled from telegraphic reports, are based on estimates made at the time, and are subject to latter investigation and consequent revision. Taken as a whole, however, they give an approximately correct view of the losses incurred. The figures represent loss in thousands.

Week Ending August 24

LAKE GEORGE, N. Y.—Carpenter and Irish blocks damaged.. 40
LEESVILLE, LA.—Machine shop, Weber King Mfg. Co..... 25
PICKERING, ONT.—Plant of Ross Excelsior Mills..... 45
MOORSVILLE, IND.—Bldg. of Fall Creek Mfg. Co..... 25
CHICAGO, ILL.—Nordenberg Trunk Works damaged..... 40
BETHLEHEM, PA.—Bldg. occupied by Home Furnishings Co.. 80
ST. BONIFACE, CANADA—Plant of North Star Oil Co..... 40
TEHERAN, ILL.—Farmers' grain elevator destroyed..... 25
FAIRVIEW, PA.—Farm bldgs. of W. H. Foster..... 35
HAMIOTA, MAN.—Tsutin Hotel and grocery destroyed..... 25
BALTIMORE, MD.—Guilford Ave. Bldg. of Penna. R. R..... 80
ANDOVER, N. B.—Store of D. R. Bedell Co., Ltd..... 35
TACOMA, WASH.—Business property at Fort Lewis..... 25
SUMMER, WASH.—Pacific Lumber & Shell Oil Co..... 80
SANTA ROSA, CALIF.—Victoria Tavern on Russian River.... 45
ROLAND, WASH.—Residences and business property..... 80
AMSTERDAM, N. Y.—Bldg. occupied by White Glove Co..... 25
MARYSVILLE, WASH.—Plant of Pacific Woodenware Co..... 65
WOODLAND, CALIF.—Residence of N. B. Miller, north..... 25

Bomb Causes Fire and Panic in Chicago

Fire, believed to have been started by a bomb explosion in the Italian section of Chicago, caused injury to five persons and forced families occupying the three floors above the Racine Packing Company to flee for safety. Two persons leaped from upper floor windows and others clutched supports until rescued by the fire department. A number of thrilling rescues were made.

NASHVILLE, TENN.—Farris Hardwood Lumber Co..... 150
ANDOVER, CONN.—Plant of Case Paper Board Co..... 60
GENEVA, N. Y.—Bldg. of Concrete Mfg. Co..... 40
WITHERBEE, N. Y.—Several business buildings..... 100
BUNTYN, TENN.—Five stores destroyed..... 30
LUDINGTON, WISC.—Ludington Co-operative Creamery..... 25
HAVERHILL, MASS.—Plant of Merrimac Ice Co., Round Pond 80
MEXICO, MO.—Collins Bros. store..... 25
TOPINABEE, MICH.—Topinabee Hotel, Mullet Lake..... 45
TYLER, TEX.—Sledge Mfg. Co. plant damaged..... 80
MILWAUKEE, WIS.—Business building 681 Third St..... 70
CATO, N. Y.—Barn and crops of Joseph Logo destroyed..... 25
DAVENPORT, IA.—Sacred Heart Cathedral damaged..... 40
TOPPENISH, WASH.—Northern Pacific freight depot..... 25
PUGWASH, N. S.—Business block, owned by E. Elliott..... 65
BELMONT, ONT.—Whse. of Elgin-Middlesex Farmers, Ltd.... 25
LOUISEVILLE, QUE.—Nine dwellings destroyed..... 45
CONNELL, WASH.—Warehouse of W. O. Marshall..... 80
BAY CITY, MICH.—Plant of Bay City Elec. Steel Casting Co.. 125
PORT ARTHUR, TEX.—Plant of Texas Refining Co..... 800
JAMAICA, L. I., N. Y.—Factory of Asphalt Tile Co..... 60
SAGINAW, MICH.—Benjamin Franklin Hotel damaged..... 65
DALLAS, TEX.—Whse. of Dallas Transfer & Terminal Co.... 25
ORAVILLE, CALIF.—Several dwellings destroyed..... 25
ST. BONIFACE, MAN., CAN.—Waller Apt. block..... 25
WILCOX, SASK., CAN.—Elevator of Munro-Fowler Co..... 40
INDIANAPOLIS, IND.—Clothing and Sportsgoods store..... 80
PITTSBURGH, PA.—Plant of Bruckman Lumber Co..... 65
SHREVEPORT, LA.—Store of Saenger Drug Co..... 30
LA GRANDE, OREG.—Union County Court House destroyed... 30
SOUTH DALLAS, TEX.—Fulton Supply Co. plant damaged.... 40
LAWTON, OKLA.—Rock Island Freight depot..... 60
FRESNO, CALIF.—Winery of A. Mattei & adj. property..... 80
FLINT, MICH.—Fair Park dance hall destroyed..... 30
ROCHESTER, N. Y.—Bldg. occupied by F. C. Critenden Co.... 30
PORTOLA, CALIF.—Portola Laundry and adj. property..... 80
HAWKINS, WIS.—Factory of Rusk Mfg. Co..... 30
ROSTHERN, SASK.—National Hotel of E. H. Biggar..... 25
ST. LOUIS, MO.—Bldg. occupied by Schleeter Mfg. Co..... 80
UNIONVILLE, MO.—Farmers' Co-operative Store destroyed.... 60
DARLINGTON, WISC.—Garage and ten automobiles..... 25
WEST POINT, N. Y.—Garage, U. S. Military Academy..... 50

Cass Heads N. Y. State Firemen

An interesting convention of the New York State Firemen's Association was held in Ithaca, N. Y. Several instructive talks were given.

Captain Albert B. Moore, of the New York State Police, spoke on "How the State Troopers Can Cooperate With the Rural Fire Department." He stressed the fact that apparatus was not subject to the provisions of the motor vehicle law and did not have to carry licenses. Apparatus has also the right of way on thoroughfares. He said that the firemen should conduct campaigns to educate the public to yield their right of way to fire apparatus responding to alarms.

He spoke of the dangerous conditions that existed at summer hotels and resorts where there were no measures taken for fire protection. He described conditions as being frightful.

Chief F. A. Murray, traveling drill master with headquarters at New Haven, Conn., spoke on "The Importance of the Drill School and Fire College Work."

Clinton D. Cass of Ithaca, first vice-president, was elected president of the association. He succeeds William J. Coleman of Potsdam, presiding officer for the past two years.

Rev. Joseph R. Alten of Sea Cliff was elected first vice-president; Fred A. Davis, Fort Edward, secretary; William H. Swartout, Brooklyn, treasurer, and the following as trustees of the Firemen's Home at Hudson: Supreme Court Justice Arthur S. Tompkins, Nyack; John A. Paffenback, Schenectady; George F. Cornell, Richmond, S. I., and George W. Collier, New York.

Memorial services were conducted by Rev. Joseph R. Alten, officer of the association.

The 1929 convention of the association will be held at Saranac Lake. Since the 1927 meeting, forty-seven new organizations have become members of the association.

Babcock Handling Fomon Generators

Capt. Wm. Paul Babcock, manager of the Hudson Valley Fire Protection Agency, Nyack, N. Y., has been appointed agent for the Fomon foam generators in the Hudson River valley section.

Mr. Babcock has attended firemen's meetings and conventions in his section and has lectured on the value of salvage work. He has been instrumental in developing a fire school that was conducted by the Nyack Fire Department. He has worked on fire protection problems for industrial plants and institutions, and with volunteer fire departments. Mr. Babcock does not charge for such surveys or written reports and is pleased to work with various fire companies or individuals on such problems.

GRAND RAPIDS PROVES THAT FIRE PREVENTION WORK PAYS

Through United Community Activity, City Won Prize for Best Work in Fire Prevention —Fire Losses Reduced to $1.72 Per Person

By FRED H. LOCKE,
City Manager, Grand Rapids, Mich.*

AN effective fire prevention campaign will pay any city a larger dividend in the preservation of lives and property values than almost any other activity in which a city can engage.

In Grand Rapids, the fire division of the department of public safety is performing the dual function of fire extinguishment and fire prevention. Her citizens were justly proud when in 1927 she was awarded first honors of cities from 100,000 to 500,000 population for the best record in fire prevention work during the year in a contest conducted by the National Chamber of Commerce. We accept this honor with gratitude and while we hope to be equally fortunate another year, we are glad to set forth the methods used to accomplish this result for whatever benefit other cities may be able to gain from our experience.

For several years, our firemen had been making thousands of inspections of residences and business houses annually. We had been participating in National Fire Prevention Week by conducting special parades and by talks in schools and before civic bodies. But in spite of this, our annual fire less had gradually climbed until it had reached the staggering figure of $9.18 per capita.

A Plan Proposed for All Year Campaign

A plan originating with the assistant fire marshal, Fred Higgins, who heads the fire prevention work for the division, was then proposed for an all year around fire prevention campaign. The local Safety Council was asked to sponsor this campaign, which they gladly did. It involved the cooperation of the various public utilities and the large business organizations of the city. These were divided into groups such as furniture manufacturers, metal workers, coal dealers, milk dealers, bankers, and so on, until we had a group for each two weeks in the year. These groups, at their own expense, put messages into the pay envelops of all their employees, placed selected posters in conspicuous places and upon their trucks and wagons, and displayed fire prevention messages.

The public utility companies put messages on their bills to the consumers. The street railway carried large posters on their street cars. Milk dealers placed messages on the bottle caps. During the shopping season, the insurance agencies arranged with many merchants to place fire prevention messages in every package leaving their stores. The local newspapers gave freely of their space, and prior to the Christmas season, published notices to be careful with Christmas trees and refrain from using candles.

School Children and Boy Scouts Help

The school children were supplied with pamphlets showing fire loss experiences and were requested by the teacher to take the pamphlet home to their parents to read, and report to the teacher that this was done, and also to report the location of the fire alarm box nearest to their homes.

A large board was equipped with a fire alarm box and all the appliances electrically connected so that when the box was pulled, it showed how the fire alarm office was notified of a fire and its location. This board was taken by two firemen into every school room and the children were taught how to pull a box.

The sidewalks were stenciled at street corners with the words "Prevent Fire." Nearly all the large factories had these two words stenciled on the walls in front of work benches, posts, and stairways, and any other place where such a sign could be used to act as a constant reminder to all in the building. This plan was put in to effect in November, 1924, and has been carried on with a few minor changes since that date.

The local Boy Scout organization has been interested in fire prevention and they have organized into what we term "The Block Plan." We have twelve fire districts with a fire station in each. These boys are assigned to districts according to their troop locations and are instructed in their duties by the officers and men at their respective fire stations. The boy is taken by a firemen and introduced to a few of the people living in the block. He is then expected to make the acquaintance of the other residents of the block. He fills out a card showing the number of houses, number of families, number of children, number of automobiles, and such other information as the card calls for. The scout does not make inspections of the dwellings but if he finds piles of rubbish or other unsatisfactory conditions, he reports to his district station and a firemen investigates the condition and insists upon its correction.

The various fire stations are now conducting meetings within their districts which the people of the neighborhood are invited to attend. Talks upon the various causes of fires in the home are given by the firemen. The meetings are made interesting with music, songs and motion pictures showing fire and street accident scenes.

During the month of April, 1928, these meetings had a total attendance of over 10,000. The official records show that the firemen made 85,000 inspections during the year 1927. They have made speeches before luncheon clubs and factory meetings, and over the radio. Fire drills are conducted by our firemen in all our schools every two weeks. Bulletin boards are prepared and posted from time to time in the lobby of the City Hall.

Gratifying Results

The fire prevention activities as outlined above have resulted in a marked reduction in our fire loss, as is illustrated by the following figures:

Year	*Fire Loss*	*Per Capita*
1923	$1,172,676.00	$7.66
1924	1,077,318.00	6.91
1925	815,888.00	4.98
1926	312,825.00	1.89
1927	290,830.00	1.72

We have received excellent cooperation from every local organization and firm that has been approached. The board of education encourages fire prevention programs in the schools. Such cooperation is not only desirable but necessary to successful fire prevention activity.

The activites and efforts outlined above are the basis for the reduction of our fire loss from $7.66 per capita five years ago to $1.72 in 1927. We are continuing our program and hope that the present year may show a still further reduction.

* Reprinted from *National Municipal Review*.

One Killed in Pottery Plant Explosion in Indiana

One man is known to have been killed and several injured in the explosion which wrecked the Indiana Sanitary Pottery Company plant at Hammond, Ind. Following the explosion, fire broke out. The building was two stories high, brick construction, and covered half a block. The building was virtually destroyed. The photograph shows the ruins just after the fire.

Paducah, Ky., Awaits New Pumper—Paducah, Ky., is expecting delivery of its new 1,000-gallon pumper manufactured by the General Manufacturing Co., of St. Louis.

Weehawken, N. J., Back Pay Increase—Firemen in Weehawken, N. J., collected the necessary signatures to a petition that will be presented to the Township Committee, requesting an increase in firemen's pay. The increases advocated follow: firemen, $2,300 to $2,500; lieutenant, $2,700 to $3,000; captain, $2,800 to $3,100; deputy chief, $3,000 to $3,500; chief, $3,100 to $4,000. New firemen will be appointed at $2,100 a year and will continue to receive yearly increases until $2,500 is reached.

Fire Fighting on Other Side of the World

(Continued from page 768)

year. A new station at Naigaum Tank, Dadar, for the protection of the north of the island is nearing completion.

"On 21 occasions brigade appliances responded to fallen buildings. As a result of these collapses 15 persons lost their lives and 33 others received slight injuries. Thirty-eight inspections of theatres and cinemas were carried out and 325 of premises in connection with dangerous trades.

"Hydrant inspection throughout the island was regularly carried out. Instruction classes to the staff in first aid to the injured which were started during the year were continued regularly and three examinations held. As a result 39 men were successful and were presented with pass certificates, while only 5 failed.

"In the ambulance service though there was a falling off in the number of accident cases again this year the number of hire cases increased showing how popular the service is. In all ambulances responded to 531 accident cases and 1,173 cases of hire as against 627 and 1,097 last year, carried 1,839 persons and traveled 17,217 miles. First aid to the injured was rendered by the staff on 140 occasions."

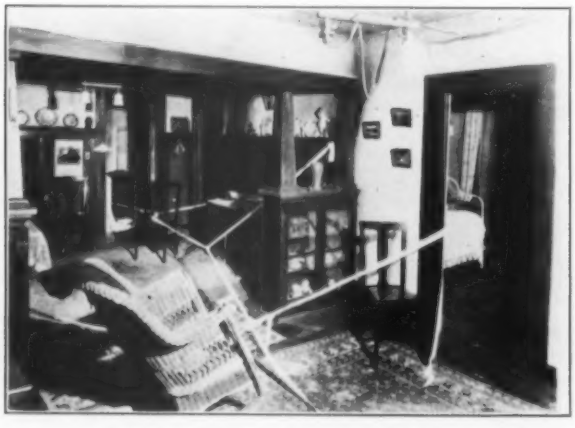
The budgeted strength and equipment of the brigade are as follows: One chief officer, one second officer, 12 station officers, one motor mechanic, one sub-officer, 10 engineers and fitters, 23 motor drivers, 27 tindals, 208 firemen, 4 turncocks, one carpenter, office staff of 4 clerks, and ambulance staff of 6 motor drivers and 15 attendants. Equipment consists of 11 motor pumps, 4 steam motor engines, 3 motor escape and first aid tenders, one motor turntable ladder, one motor emergency van, one hose and ladder truck, 9 hand fire escapes, 13 hose reels, 5 smoke helmets, one oxy-acetylene cutting plant, one motor car, 2 motor lorries, 40,000 feet of hose and other appliances, and 5 ambulances.

Cairo Commandant Wants More Hydrants

The annual report of the Cairo, Egypt, fire brigade for 1926 contains the following remarks by Commandant T. W. Russell:

"The work of the brigade is always on the increase especially on the administrative side of inspections of public and other establishments. I have the satisfaction to report to Your Excellency (The Minister of the Interior) that the brigade is in a very high state of efficiency, the men are proud of their work, the discipline is excellent, and the officers are keen and competent.

"My principal demands for the future are: (1.) hydrants and more hydrants; (2.) an up-to-date fire float on the river for the exclusive use of the brigade; (3.) the continued sympathy of the government in meeting my demands as they arise for the necessary increase in men and buildings."



Here Is a Possible Fire That Had Strings Tied to It

If everything had worked as planned, there would be one home less in Fresno, Cal., and a certain firebug would be reaping the benefits of his work. But a man at a nearby gasoline station suspected the firebug of preparing for a fire and the police were notified. The garage men was told to place a compound in the gasoline, sold to the man, so as to retard its combustion. The firebug tore up a bedsheet into strips, soaked them in gasoline and tied them about the room as illustrated. He fixed a candle so that after it had burned long enough to permit a get-a-way, the string would ignite and then spread rapidly to the entire interior. When the candle was lit, and it was time to vacate, the firebug found a couple of policemen waiting to arrest him.

The following data is taken from the report submitted by J. Jones, Bimbashi, Superintendent of the Cairo City Fire Brigade:

"In 1926 the total number of calls on the brigade was 729, of which 655 were to fires or supposed fires and 64 for rescues from collapsing houses, staircases, etc., or other causes. There were 12 cases of false alarms given in good faith and no malicious calls. There were 9 cases of incendiarism and 4 cases of suicide by fire ending in death. Of the 9 cases of incendiarism 7 have been filed for insufficiency of evidence against the accused and 2 are still pending.

"Three new fire stations equipped with motor fire engines have been created during the past year at Khalifa, Sayeda Zeinab, and Gamalia. Three more substations equipped with hose reels and hand escapes have also been established at Darb-el-Ahmar, Bulaq, and Miniet-el-Seereg (Old Shubra Caracol Buildings.)

"The Heliopolis Oases Company has been so gracious as to cede gratis to the government a suitable plot of ground of about 1,780 square metres at Sharia Salah-ed-Fine for the erection of an up-to-date fire station.

"Four light motor fire engines have been received and put in commission during the year. A fifth light motor fire engine particularly for use in the narrow and congested streets and alleys of Bulaq locality is on order. One foam motor fire engine for combating fires in inflammable liquids is also on order.

"About 400 new hydrants have been installed during the year bringing the total of the new hydrants to about 550. A further credit has been asked for in the budget proposals for the installation of about 300 hydrants with request that a similar amount be included annually for 10 or 12 years, so that Cairo may have, after the lapse of this time, about 5,000 hydrants which would not be all that are desired, but still much better than at present. In fact the ratio of hydrants to the population should be 10 per 1,000 so that Cairo should have at present 10,000 hydrants.

"Fire hydrants are the principal weapon of a fire brigade in combatting fires. The less the distance between the hydrants, the quicker the men can have the water playing on the fire and the higher their efficiency to extinguish it. From a pecuniary point of view the increase in the number of hydrants is also more advantageous to the government. It will effect a big saving in the wear and tear of the fire hose. The upkeep of ground hydrants costs very little and a great part of the initial cost of installation will be repaid by the saving in the hose. We are really very far behind in hydrants, the number of which is quite incompatible with the up-to-date equipment of the fire brigade. The upkeep of hydrants costs very little as it is done here by our own men; whereas in Europe it is carried out by a special staff of the water companies, whose pay is defrayed by the fire brigades, which system is far more expensive. The water company has carried out many improvements during the year such as the laying of new mains and the substitution of old mains by new ones of larger diameters, also increasing the pressure in several parts of the city where it has always been miserable. The new reservoir in the Mokattam Hills, behind the Citadel, is close on completion, and when put in operation, will greatly increase the pressure and supply throughout the city.

"I understand that the requisite credit for the installation of a good number of street alarm telephones has been approved and that the proceedings for the installation are well advanced. They will be installed in convenient positions with particular regard to lack of telephones, and will be of great service, especially in the late hours of the night when telephonic communication by other means becomes more difficult to obtain. The switchboard at the Central Fire Station contains 100 lines."

Hong Kong Hotel Fire Causes Official Inquiry

The following data is from the 1926 report of the Hong Kong, China, Fire Brigade, of which E. D. C. Wolfe, is the chief officer and H. T. Brooks is the superintendent:

The cost of the fire brigade for the year was $206,232.50. A new central station and a new fire float (No. 3) were placed in service. The brigade is somewhat hampered by difficulty in finding suitable

recruits. Motor drivers are also difficult to obtain and the brigade is now relying almost entirely on training its own men.

As a result of a very serious fire which occurred at the Hong Kong Hotel on the first of January, 1926, a Committee of Enquiry was appointed by the Governor, to enquire into the working of the fire brigade. As a result of this enquiry four additional European sub-officers were provided for in the 1927 estimates and other increases in personnel and equipment were agreed upon.

On the 23rd of July there was a severe rainstorm accompanied by landslides, collapses, and casualties. There was also much flooding of streets both in Hong Kong and Kowloon. The most serious landslide occurred at the Peak Pumping Station in the Pokfulam Road, a large boulder weighing approximately 3000 tons becoming dislodged, rolled down the hillside and completely demolished one end of the pumping station which supplies the hill district with water. Four Chinese fitters who were at work on the pumps were crushed to death. Damage amounting to $1,000,000 was done to roads, nullahs, and buildings throughout the colony. The rainfall amounted to 19 inches in 8 hours. Some of the thoroughfares were 2 to 3 feet deep in water and when the water subsided they were impassable owing to the slit left behind.

The Governor, Sir Cecil Clementi, K.C.M.G., commended the members of the fire brigade on the work performed at the hotel fire, and also invested the undermentioned officers and men in connection with the Po Hing Fong disaster (July, 1925): To Supt. H. T. Brooks and Acting Station Officer P. T. Condon, "for conspicuous gallantry in saving life at imminent personal risk," the medal of the Order of St. John of Jerusalem; to Fireman No. 42, Fan Lam, and Fireman No. 79, Lau Kiu, "for conspicuous bravery," the Belilios Star and $100.

Station Officer G. Saunders was also invested by the Chief Officer, Hon. E. D. C. Wolfe, with the Long Service Medal of the Professional Fire Brigades Association.

Twenty-five new fire alarms were installed in various districts during the year. Further and considerable improvements have been made to the water supply for fire fighting purposes, larger mains to replace smaller ones having been laid in the Central and Eastern Districts of Hong Kong and in the Mong Kok and Kowloon Districts of the peninsular.

The new fire float has a capacity of 4,000 gallons per minute.

Indiana Firemen Elect Frank Miller

Frank H. Miller, chief of fire department at Terre Haute, Ind., was elected president at the eleventh annual convention of the Indiana Firemen's Association held at Terre Haute. The twenty-third annual convention of the Northern Indiana Industrial and Volunteer Firemen's Association was held at the same time. The convention was the largest gathering of firemen ever held in the state.

Chief Miller and his committee provided plenty of entertainment for the visiting firemen.

There were various contests from pulling the old hose cart up to demonstrations of handling modern equipment.

Carl Steup of Fort Wayne has been named chairman of the Fire Prevention committee to start a state-wide fire prevention week.

The new officers of the Indiana Firemen's Association are Frank H. Miller, Terre Haute, president; Raymond Coon, Gary, first vice-president; Henry Scholl, Michigan City, second vice-president; Clem Smith, Terre Haute, secretary; Harry H. Fulmer, Indianapolis, treasurer, and a board of directors consisting of William Steinmetz, Evansville, Clarence Smith, Marion, James Myron, Hammond, William Griffis, Indianapolis, Albert Winter, Madison and Michael Hines, Terre Haute.

The convention next year will be held in Gary. The date will be decided upon some time in January.

The new president was secretary of the association for eleven years. He has been honored by the association for his long service record.

Ralph Williams Appointed Fresno Chief

W. Ralph Williams has been appointed chief of the Fresno, Cal., fire department succeeding Chief Thomas Baird who retired on a pension, July 1, 1928.

Chief W. Ralph Williams

Chief Williams is a member of the Fresno department for approximately twenty years. He entered the service on March 1, 1906 as a call man and became a regular driver on June 1, 1907. He was made a nozzleman on December 15, 1907 and promoted lieutenant on June 1, 1910. He was made captain on May 1, 1911.

He was advanced to fire marshal on August 1, 1921 and during the reorganization of the department, he was appointed first assistant chief. Mr. Williams assumed his new post on November 23, 1923.

While fire marshal, Chief Williams became one of the best known fire executives on the Pacific coast. His work has contributed greatly to Fresno winning the Thomas H. Inch Fire Prevention Cup and numerous other awards and mentions. He is credited with breaking up an extensive arson ring and of convicting the members of this gang.

Examinations for chief by the Civil Service Commission were not complete until August 14, and results were made public as soon afterwards as possible.

New York Fireman to go with Byrd

The Byrd Antartic Expedition which will leave soon to explore the section in the vicinity of the South Pole, will have a member of the New York Fire Department as a part of its crew. Marine Engineer Esmonde M. O'Brien of the Fireboat New Yorker has resigned from the department to become one of the marine engineers on the "City of New York," the house boat of the expedition.

He was associated with Commander Byrd in former aviation service. This time Commander Byrd requested Fire Commissioner Dorman to give O'Brien a two year's leave with pay so that he could join his crew. Provisions of city law and civil service regulations prevented such a step. There was nothing else for O'Brien to do but resign. This he did.

Commissioner Dorman said he would have been delighted to have compiled with the request, as it was an unusual distinction to have a member of the department with such an educational and scientific undertaking. It would be a credit to the New York Fire Department. Ever since Mr. Dorman made his maiden aeronautical flight in Detroit, he has been a keen follower of this means of transportation.

Mr. O'Brien is thirty-seven years old with a keen appetite for adventure. Friends in the department pray that he will return safely at the completion of the exploration trip.

Two Fire Houses Rushed in New York City—Construction on two fire stations in Brooklyn, New York, are being rushed. One on Middagh street will house Engine Co. 205, and the one on Foster avenue will house Engine Co. 250. Each building will be two stories high.

Equipment Stolen in Homestead, Pa.—Volunteer firemen in Homestead, Pa., are looking for the thieves that broke into the fire house and stole electrical fixtures that were purchased to redecorate the building. The firemen had planned to have a housewarming after the building had been improved, but all the plans have gone for naught.

INDUSTRIAL PLANT PROTECTION

COTTON STORAGE AND GINNING GREAT FIRE HAZARD IN SOUTH

Steel Teeth in Gin Machines Often Cause Sparks That Start Fire in Cotton—Material Stored in Warehouses to Await High Prices

By T. C. TALIAFERRO,
New York Underwriters Insurance Co.*

FRICTIONAL electricity caused by the rapid passing of lint cotton through the metal machinery has resulted in so many fires that the United States Bureau of Standards has made exhaustive experiments and drawn up standards and specifications for the proper electrical grounding of metal machinery. Fires are so frequent in the gin machines that steam jets in lint flues and condensers have become part of the standard gin equipment. However, in electrically-driven gins these steam jets are not available and their absence adds considerable to the risk. Usually manual protection is the only protection available, but in cities and towns where water supplies can be procured, it is not unusual to find standard inside and outside protection and often full sprinkler equipments in large, well established plants.

Flash Hazards

The quick flash hazard is ever prevalent in ginneries. Often, however, small fires occur in the gin machinery caused from frictional electricity (where the machinery is not properly electrically grounded), hot bearings, the balling up of cotton lint, and the striking of the gin saws against foreign material in the raw cotton. Thus, the hand-picked cotton, which is freer from such foreign material, creates the minimum of hazard in the ginning processes.

Even when these small fires are extinguished in their incipiency, not infrequently the smoldering cotton is discharged into the baling presses and baled while still smoldering. These bales may be stored on the gin premises, or shipped to the warehouses for storage or perhaps put in the holds of ships. The fire may smolder inside of a tightly pressed bale for days or weeks without detection, and then suddenly burst into flames. Instances are on record where, months after cotton has been ginned and baled, the bales have burst into flames from hidden interior fires and destroyed ships at sea. So it is, we are much concerned over the methods by which the cotton is harvested and cared for by the farmer.

Gins at Cottonseed Oil Mills

As the ginneries separate the seed from the cotton, they are, therefore, the chief seed supply for the cottonseed oil industry. Therefore, many crude cottonseed oil mills have their own gin plants. Here, after the cotton is ginned, the farmer has a ready market for his seed, and the cottonseed oil mill ginneries are, therefore, quite popular with the farmer, provided they offer a fair price for the seed.

Often public cotton storage warehouses erect ginneries on their premises as an added attraction to the farmer to bring his cotton to them for storage. Gins located on the premises of cottonseed oil mills or cotton storage warehouses are usually afforded inside and outside protection and often standard watch service and automatic sprinklers. Without doubt such protection affords better fire risks, but the large credits in rates play havoc with the loss ratios on even these well protected classes.

The Independent Farmer

By far the greater proportion of gin plants are located far out in the country at crossroads. Many are private gins erected by large planters for the convenience of ginning their own large crops. Others are public ginneries dependent for their popularity upon the whims of the fickle farmers in the community. Farmers are undoubtedly the most independent class of so-called business men in the world. They carry their produce to the most convenient market which offers the highest price for their wares. Gins which have done a prosperous business for years have gone into bankruptcy in a single season by reason of the cutting of a new road which enables a farmer to carry his cotton with greater ease to a more distant gin. The erection of a general store which becomes popular has been known to cause the farmers in a cotton community to immediately stop patronizing a gin they have been using for years and carry their cotton to the gin nearest this new store. A better market for their cotton at a more distant point may cause them to carry their cotton miles beyond the gin they formerly used.

The prosperity of a gin is also directly dependent upon the size of the crop in the community which it serves. Therefore, a crop failure in a certain section produces a poor business year for the gins in that section.

Machinery Heavily Mortgaged

Country gins usually suffer from restricted financial backing. The vast majority of them are built on borrowed money and are heavily mortgaged. Most gin machinery manufacturers sell the ginning machinery on a "pay as you go" basis, taking heavy mortgages on the machinery in the gins, These machinery mortgages are not considered serious by the underwriters, but when heavy mortgages in addition to these machinery mortgages are placed on the gin property a serious moral hazard is apparent.

Thus we see that, coupled with serious fire hazards connected with the actual operation of ginneries, the varying conditions which change each season complicate and make it highly difficult to pass intelligently upon a risk.

From the ginnery, cotton is transported to the warehouse. The small farmer who wishes to hold his cotton for better prices and who has only a few bales may take them back to the farm and store them in the open, under sheds or in the barn. Cotton cannot be stored in the open for any great length of time without deteriorating so that usually it is put under cover. By far the great majority of the cotton finds its way to the warehouses for storage or shipment soon after being ginned.

Cotton storage in the Southern States has become a very large and general business. In almost every town there are cotton storage warehouses where a farmer may store his cotton on a per bale basis. The underwriters' requirements for the handling and storage of cotton are very specific. In the smaller warehouses

* Abstract of lecture at the Insurance Society of New York.

where limited amounts of cotton are stored, warehousemen are not usually so punctilious about following these requirements, but in the larger warehouses, at the big concentration points, values are so great and insurance premiums so large, that a small reduction in rate results in considerable saving. Therefore, in these large warehouses may be found every known device for reducing the fire hazard.

Warehouses

The small cotton warehouse is usually one story in height with brick side walls of seventeen inches in thickness and roof of wood covered with composition and gravel. Division walls, if any, should be of seventeen-inch thickness, parapeted three inches above the roof and teed at ends. The end walls are preferably of light frame construction with large, easily-opened frame doors. The frame ends should be easily removed so that should fire occur the firemen can have easy access to the cotton. Thus, even after a section has been set on fire, much cotton has been salvaged. In fact, even after a bale of cotton has been set on fire, it may be extinguished and much of the cotton in the center of the bale salvaged.

The larger cotton warehouses are sectioned off in fire divisions. The standards require not more than 1,000 bales to be stored in one section. Eleven square feet of floor area is allowed for the storage of one bale. This allows sufficient excess area for the necessary aisle spaces between bales. So that salvaging may be made easy in case of fire, cotton should not be stored higher than one bale on end. During congested periods, however, warehousemen find it necessary to tier the cotton, storing it in tiers, two bales laid flat, or one on end and one flat, or two on end, or in extreme cases, three on sides.

Many of the larger warehouses have cotton compresses for repressing the cotton for overseas shipment. Such cotton as is consumed in this country is rarely repressed. The compress is usually cut off from the storage sections of the warehouse by standard division walls, with openings properly protected.

Newly Recognized Lightning Hazard

Among close students of cotton underwriting, considerable interest in lightning losses has developed. In several warehouses fires have occurred which have totally destroyed the entire contents of several fire sections. Experiments carried on in the experimental laboratories of the General Electric Company appear to have thrown very interesting light on the subject. In baling cotton metal ties are used. These ties run laterally around the bale and are spaced about eight inches apart. By experiment it has been proven that the electricity discharged at a voltage approximating that of lightning will set up a static charge on the metal ties of baled cotton. This static charge, if of sufficient intensity, will arc across to the ground, setting fire to the cotton bale. Thus, if we follow the experiment to its logical conclusion, a bolt of lighting striking in one fire section of a warehouse might set up fires in nearby sections from these induced electrical charges on the cotton bale ties. The logical cure for such lightning hazard would, of course, be adequate lightning-rod protection for the entire warehouse.

From the public and private warehouses, and sometimes direct from the gins and the farms cotton in bales is shipped direct to the mills.

New England's Textile Industry

These mills are scattered over the South, the Southwest, and the East. Until the World War most of the textile manufacturing was done in the New England States. Under a system of manufacturing built up through generations of effort, New England had practically a monopoly on the industry.

The Industry Moves South

At the same time the textile industry in the South and Southwest was in its infancy. Through lack of capital and experience the Southern mills lived a hand-to-mouth existence, scarcely being able to survive the strong, stiff competition from New England.

When the World War came the Southern mills were breathing their dying gasp. But the sudden enormous demand for the South's products created by the World War brought to the South the financial relief she so sorely needed. With this new wealth she was able to develop the wonderful advantages nature had so lavishly bestowed upon her, advantages in climate, labor conditions, cheap hydroelectric power, and her close proximity to the source of raw stock supply; so it was that in less than ten years' time the positions of the New England and the Southern mills were reversed. New, beautiful, modern mills sprang up like mushrooms throughout the Piedmont sections of the Carolinas, Georgia and Alabama.

Conversely New England's cotton mill industry began to slump. Some of the world's largest textile organizations went into bankruptcy. Corporations' paper that had been gilt edge for generations became worthless and New England and the whole East stood astounded. Many of the large New England mills have discarded their old plants and have followed the trend of the industry south, there to erect new, modern plants on an even larger and grander scale than those they have abandoned in the North.

Apparatus Purchase Recommended for Oswego, N. Y.—A special committee has recommended that the council of Oswego, N. Y., purchase a new chemical car and a ladder truck.

Pumper Delivered to Sayville, N. Y.—A 1,000-gallon Mack pumper has been delivered to Sayville, N. Y. It is equipped with the usual tools and a foam generator.

Airplane Destroyed in U. S. Scout Fleet Practice

One thing is interesting — it takes three minutes, by actual test to burn an airplane. During the first annual battle practice of the United States Scout Fleet at Norfolk, Va., the officers desired to demonstrate how planes could mow down marching troops. The burning plane was part of the practice skirmish.

Getting Fire Department Publicity

(*Continued from page 770*)

such a committee, the chief can work out projects such as public demonstrations of new apparatus, and new drills. These give the public a confidence in the department and shows the people of the community that the fire department is alert to the newest methods of fire fighting.

Newspapers can always be interested in essay contests on fire prevention as an introduction to Fire Prevention Week among school children. Public and parochial school officials will be interested through the papers and the chamber of commerce committee, and with proper planning such a feature is of great benefit to your program. If the children of today learn the lesson of fire prevention, your insurance rates will be materially reduced within a few years.

Business men are inclined to thwart fire prevention methods if they think their business is being interfered with. They are apt to resent inspections of their properties unless they understand what it all means to them. This is a psychological condition that must be overcome, and it can best be overcome through keeping your fight against fire hazards constantly in the public eye. Fire prevention is not popular when it hits practices that your leading citizens are inclined to use; but let Citizen John Smith and his friends know about your plans, tell them frankly and fearlessly what you are trying to do, and you will find that they will cooperate in a manner that will astonish you.

Ohio's splendid record in fire prevention, the low fire loss throughout the state, and the efficient departments of which you gentlemen are the chiefs, proves the statement that publicity is your strong ally in your fight against fire loss. Your cooperation with the state fire marshal's office, your interest in the recommendations of the National Board, and the cooperation you have given to those agencies which help reduce fire loss, all show brilliantly on your records.

What may be said down through the year that will set the chief a man apart? What shall be the ultimate praise of this old chief? It is this: He was a man who took his community by the hand and showed them the horrors and the devastation of fire, and who through his patient leadership won their friendly cooperation, thus establishing for his community forever those fire prevention methods which have saved the lives and homes of Citizen John Smith and me.

Magirus Truck in Milwaukee Equipped With Life Belt

A special patented life belt with rope and safety pulley is part of the equipment of the Magirus 100-foot aerial ladder and water tower delivered to Milwaukee, Wis. The belt is handled by one fireman and does away with rescue work by means of the ladder. The person to be rescued is lowered by means of the life belt, in a quicker and more secure manner. This apparatus has already been instrumental in saving four lives. The Magirus Fire Appliance Company has received an order for an 85-foot aerial truck and water tower from Sidney, Ohio.

Constant Vigilance in Fire Prevention

(*Continued from page 772*)

of inflammable vapor present in the oven. This alone required months of laboratory work. This done, a scheme was devised by which a vane is mounted in the ventilating pipe in such a way that the draft necessary for safety must hold the vane in a certain position before the oven can be started or operated. The manufacturers of japan ovens have cooperated heartily in this investigation, so that now the necessary safety features are incorporated in the new ovens that are being installed.

The records compiled by the National Fire Protection Association, show that of 39,000 fires in sprinklered buildings, 51 per cent were extinguished by two sprinklers or less, 81 per cent by eight sprinklers or less, discharging the equivalent of only one fire stream, and 91 per cent by 20 sprinklers or less, or the equivalent of 3 hose streams. Practically 100 per cent efficiency can be obtained if sprinklers always have a good reliable water supply.

This is why insurance inspectors devote so much time to testing sprinkler valves to be sure that they are open and to making water flow tests during the summer time, to be sure that a good supply of water is always available for the sprinklers.

If sprinkler valves are kept open, if pipes are clean, and a good water supply is available, automatic sprinklers can be depended upon ninety-nine times out of one hundred to extinguish a fire in its incipiency. You can see why this is so, because they apply water at the very point where the fire is burning. In some cities the fire departments make it a practice to connect the first stream from a pumper to the siamese connection to the sprinkler system, other cities attach the second line, and still others leave it to the discretion of the fire chief.

Large industrial plants have secondary supplies of their own for sprinklers, in the form of gravity tanks or fire pumps. In a case of this kind, there would of course be no advantage in the pumper of a public fire department taking suction from the yard hydrant and pumping into a sprinkler system, because the mill fire pump is already performing that service.

Automatic sprinklers are often useful in rooms where fire is least expected. At the General Electric Company, Lynn, Mass., not long ago, three men were at work in a wash room in the office building, using a paint remover containing inflammable solvents for cleaning the walls. One of the men was working on a step-ladder, when a static spark jumped from his finger to a steam pipe nearby, igniting the inflammable vapors suspended in the air. The burning gases expanded due to the heat and created sufficient pressure so that the men were unable to pull the door open inward. Two sprinklers operated, however, extinguished the fire and cooled down the gases and saved the men's lives. The only fire loss was scorching of the woodwork and cracking of the window glass. This is one of the many examples in which sprinklers have acted as life savers in rooms where ordinarily one would think sprinklers were unnecessary.

When an owner has spent money for sprinklers, fire pumps, and other fire protective equipment, he has purchased tools for use at the time of a possible fire. Mere possession of these tools, however, is no guarantee against loss. The equipment must by proper care and maintenance, be kept ever ready for the time when fire will put it to the test, and men must be trained to use it to the best advantage. This is the justification for the private brigade in an industrial plant. Occasionally the public fire department is delayed, due to a fire in some other part of the city or because of a freight train at a railroad crossing, obstructed street, or other causes, and then the private

equipment is able to hold the fire in control until the arrival of the fire department.

New fire hazards are constantly being introduced in industrial plants. These require new safeguards. The Factory Mutual Companies maintain a testing station in Boston where various fire hazards are being studied, safeguards devised, and the latest type of protective equipment tested. One of the problems which confronted us was the protection of millions of dollars worth of logs stored in yards of paper mills during the summer months in piles 50 to 60 feet high and 200 feet in diameter, to insure continuous operation during the winter. Some of these piles contain 10,000 to 20,000 cords, and during the summer when the surface of the pile has been thoroughly dried by the wind and sun, sparks from a locomotive puffing up a grade sometimes land on top of a pile of pulpwood and start a fire. No ordinary hose stream can reach the top of the pile from the ground, and you can readily appreciate what a difficult and hazardous undertaking it is for men to attempt to climb up over the logs with a line of hose.

Although automatic sprinklers cannot be utilized to protect this valuable log-pile storage, a highly effective protection is available, by means of monitor nozzles capable of concentrating powerful streams on any part of a pile. The log storage is subdivided into units of 10,000 to 20,000 cords with 100-foot clear spaces between them. The ends of some of the piles are provided with concrete barriers to define the clear spaces which should be maintained between the piles. Clean conditions prevail in the yard, and concrete houses are used for the motors driving the conveyors, all with a vew of reducing the fire hazard to a minimum.

Efficiency of Carbon Dioxide

Another problem now being studied by the Factory Mutual Laboratories is the efficiency of liquid carbon dioxide. This gas is compressed to 800 lbs. per square inch turning it to a liquid. The portable extinguishers have about seven pounds of this liquid in each cylinder. A siphon tube extends to the bottom and when a valve is opened the liquid is expelled through a cone shaped nozzle which allows the liquid to expand to such an extent that the temperature is reduced to 110° below zero which freezes the escaping liquid into a snow. This snow does not melt into a liquid again, but passes off directly in the form of an inert gas. The dryness of this extinguishing agent and its harmlessness for the most delicate fabrics or machinery makes it an especially good extinguisher for telephone switchboards or any apparatus that would be injured by water.

Liquid carbon dioxide is especially good for fires in alcohol because foam when applied is dissolved by the alcohol.

In addition to the portable extinguishers, there are batteries of stationary equipment coming into use. Already a number of equipments have been used on ship board and turned into the holds where it is especially effective because it does not affect the buoyancy of the ship nor injure the cargo.

Two equipments have also been installed in industrial plants, one at the Boston Dye House at Malden, Mass., for gasoline dry-cleaners and the other at the Armstrong Cork Company, Lancaster, Pennsylvania, for the protection of linseed oil kettles. The gas is stored in ten cylinders on platform scales to check the weight and therefore the amount of carbon dioxide, which is piped to open fan-tail nozzles with a manually operated valve. The ventilators and windows are closed at the same time. A test was made at this plant. Having ignited one of the kettles of linseed oil and allowed it to burn for one minute, the carbon dioxide was then turned on and put out the fire in less than one minute. A short time following this, an actual fire occurred which was also extinguished in one minute.

Another use for carbon dioxide is on large electric generators. The gas is discharged into the closed ventilating system and the inert atmosphere is maintained until the machine stops, which usually requires about one-half hour.

In all of the various ways which I have described, industrial plants are attempting to handle their own fire hazards with the result that many large and dangerous fires are avoided.

Chief Doebler of N. Tonawanda Dead

Chief Charles F. Doebler of North Tonawanda, N. Y., died at a local hospital following an apoplectic stroke. He was removed to the hospital suffering from apoplexy, and the stroke hastened his death.

He was born in North Tonawanda forty-four years ago. He joined the department twenty years ago as a fireman and was chief for nearly fifteen years.

Chief Doebler is survived by a wife, a mother, three brothers and two sisters.

Fairfax, Va., Considers Fire Protection—Chief J. H. Beattle, McLean, addressed the Fairfax, Va., Chamber of Commerce on plans for a county wide fire protection system.

MODERN BUILDING CONSTRUCTION CHANGES PROBLEMS FOR CHIEF

Chances Are That Modern Fireproof Structure Is Poorly Constructed or That Cheap Materials Were Used—New Field Opened for Chief

By J. CLARK REILLY
General Manager, Canadian Construction Association*

ONE of the most practical fields for study on your part in that of modern construction, including methods and materials, in order to reduce fire hazards, assist in fighting fires and in a still more important sense, to prevent them. Let me say first of all that I believe most people today, not directly connected with the construction industry, fail to realize what a marvelous and rapid advance there has been in the past ten or fifteen years in the field of building construction. To most of us a building is just so much stone, brick, mortar, steel and wood put together in varying quantities by some contractor according to some architect's plan. As a matter of fact, there has been a wonderful revolution during the past two decades in the type of modern building construction and this has a very direct effect upon the work of the fire chief.

A generation ago, in order to secure what was then termed a "fire proof" structure, heavy brick and stone fire walls were employed, and there were iron girders and wooden floors resting on the bearing walls of the building which, as a rule, only reached a modern height of a six, seven or eight stories. Today we often see what was thought to be an impossibility, namely, the brick work on the walls of a building being started on some of the upper stories before the bottom part is completed. As we have come to know more about concrete and its use, the engineers have brought out new designs which have still further reduced the weight in floors and walls. New methods of reinforcing have been devised and various substitutes for older materials introduced.

This style of architecture, which we may call for convenience the "tower" type of building, is a development of the older plain "skyscraper." It is designed so that there may be more light and fresh air, by recessing the upper floors in a series of step-backs, until the higher ones are in the form of a tall center tower. By the use of this system, permission has been secured in some of our principal cities for office buildings, hotels, stores, and other structures, of much greater height than formerly allowed. Into the construction of these buildings are entering many new materials, in various combinations, many of which have been specially designed to resist fire. Gypsum, cork, steel bars, cement and hollow tile, all play their part in combination with the better known brick, stone, marble and structural steel. Their use permits many new and striking effects, as well as greater height and space economy than was previously considered possible.

In the newer factories and warehouses, while they have been designed not so much for height as accommodation to suit the requirements of the special business needs, the construction engineer has been busy endeavoring to give adequate protection against fire, while providing the maximum of light and space for the worker. The old "slow burning" or "mill" construction is giving way to the reinforced concrete or steel beam and concrete. Meanwhile, in addition, the sprinkler systems continue to minimize the fire hazard from the contents.

So far as our homes are concerned, there is possibly the least change structurally, but already there is a considerable increase in the use of light steel beams, and materials which are more or less fire resistant.

There is no really "fire proof" building, no matter how well it may be built, nor what materials are used in its construction. The modern building may, however, be accurately described as "fire safe," when, by the use of modern design and materials, advantage has been taken of everything humanly possible to prevent the ravages of fire.

It is claimed that the great conflagrations of the past will be an impossibility in cities having their principal buildings constructed on modern plans. The trouble is, of course, that, side by side with some of the newer and carefully designed buildings are old structures, composed of inflammable materials. There is also the ever-present danger that unscrupulous persons may skimp materials or strength in design, so that a building, alleged to be "fire-proof" may be a real menace to the safety of life and property.

There are also hazards which occur during the period when these buildings are being erected, before the special water tanks and other fire-fighting appliances are installed. As you know, there are millions of feet of lumber used for concrete

*Abstract of paper read at convention of Dominion Association of Fire Chiefs, Kingston, Ont.

forms, and these present a danger which is seldom appreciated. Recently, in New York City, during the construction of one of these "tower" buildings, the forest of wood used in the concrete forms took fire, away up in the tower, and the best efforts of the splendid department were unavailing. Burning brands were spread over a wide area.

As a further field for your study, there is also the possible effect of streams of cold water, projected at high pressure against steel and concrete, hollow tile, gypsum block, and other materials which have been brought to red or white heat by the fire. Our experience is no doubt fairly accurate as to what happened in some of the older types of buildings, when the water hit the stone, brick-work, and iron girders. You can all tell many interesting stories of such occasions. It will be most interesting for the architect and the builder to get your information as to what occurs in the newer type of building, under such conditions of heat and cold water, and see what effects are produced by the newer combinations of materials, where the weight of the building has been considerably reduced, and the height is so much greater.

The best way, therefore, according to my viewpoint, in which the fire chief can prevent fires, is to have a working knowledge of the modern construction methods, and the various materials used, and to be actively interested in every new structure in his city during its planning, while it is being constructed, and of course, when it is occupied. I believe there ought to be a very close relationship between the chief of the fire department and the city building inspector. As a practical man, the fire chief ought to be able to give valuable advice when new buildings are securing their permits, especially in regard to the installation of fire detection devices and fire fighting appliances.

I go even further, and say that it is the duty of the fire chief to protect against and discourage the erection of buildings which he believes to be "fire traps," whether public or private structures. In this respect, he will have to be on his guard against the speculator or promoter, whose thoughts are on the rental value per square foot instead of safety measures, and whose mind is filled with the promotion of mortgage bond issues instead of the production of a building of sound design and good workmanship. All hospitals, jails, orphanages, churches, schools and theatres, erected from now on in our cities, should not be permitted to go up unless of the best fire-safe construction, and equipped with the most up-to-date fire-fighting and life-saving apparatus.

Modern construction, modern construction methods, and the use of the newer materials should not only furnish a fascinating study to the Canadian Fire Chief, but their use will reduce fire hazards, and make the burden of fire-fighting less. They are, after all, your greatest allies in the prevention of fires in your communities. The men who design and erect these modern structures should stand in very close relationship to the Fire Chief and his work. As a result of this co-operation, the fire risk and fire peril in our Canadian cities should be very materially reduced, and fire waste of life and property prevented.

Hudson Valley Firemen Have Novel Card

Members of the Hudson Valley Volunteer Firemen's Association of New York are now carrying a somewhat unique form of membership card. The card is made double the usual length and perforated at the centre. The right hand portion is the usual type of membership card while the left hand section is to be detached at the registration desk when attending the association's convention.

This form has been designed to eliminate a large amount of detail secretarial work. The card has been advocated by Chief Chris W. Noll of Poughkeepsie, who is secretary of the group.

WM. PAUL BABCOCK.

Illinois Firemen to Meet in LaSalle

Plans have been completed for the forty-first annual convention of the Illinois Firemen's Association which will be held September 11–13 in LaSalle.

The convention will be called to order by President Thomas J. Ruddy of Joliet. Some of the papers to be presented are as follows:

"The Importance of Ventilation," by M. J. Ford, chairman Judiciary Committee, Ottawa.

"Fire Hazards and the Importance of Precautionary Measures," by Chief Herm. J. Lohman, Aurora.

"Testing Fire Apparatus, Its meaning and Its Value," by C. W. Hauth, engineer, Illinois Inspection Bureau, Chicago.

The Use of 1½-Inch Hose.

"Arson Investigations," by Frank R. Morgridge, assistant to the general manager, National Board of Fire Underwriters, New York.

"The Past, Present and Future of Fire Prevention," by Chief Albert Herring, Murphysboro.

"Human Element Versus Electric Protection," by H. L. Obrian, Chicago.

"Salvage Work," by Frank C. McAuliffe, chief of patrols, Chicago Board of Underwriters, Chicago.

"The Life of a Volunteer," by August W. Thode, past president Illinois Firemen's Association, Galena.

There will be general discussions on any subject that may be brought up for such treatment. The convention banquet will be held on September 12. LaSalle has provided plenty of entertainment for the many firemen who will attend the convention.

Short Fire School Held in Minnesota

Sponsored by the League of Minnesota Municipalities, the Minnesota Department of Insurance and the University of Minnesota, a short course for firemen has been held at the University and at the Minneapolis drill school.

Harvey Walker, secretary of the League, said:

"I don't know of any other school like this one, unless it is at Ames or Illinois. About four or five years ago, there was a fireman group something like it but primarily for the detection of arson. Only about twenty-five men, mostly from the Twin Cities attended."

The agencies cooperating to make this project a success are the General Inspection Bureau, National Board of Fire Underwriters, Underwriters' Laboratories, fire marshals of North and South Dakota, United States Bureau of Mines, the Minnesota Fire Department and others.

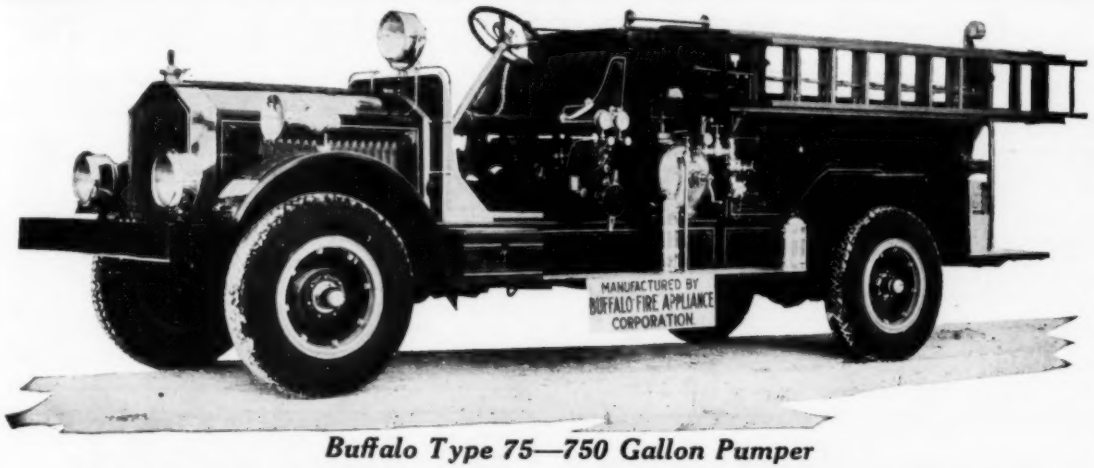
Among the nineteen men who spoke are F. R. Morgaridge, Chief Aison Bureau of the National Board of Fire Underwriters, George Muldaur, general agent of the Underwriters' Laboratories, Frank C. McAuliffe, chief of the Chicago patrol, Clarence Goldsmith, assistant chief engineer, National Board of Fire Underwriters, and R. R. Sayers, chief surgeon of the United States Bureau of Mines.

Drill Carried as Special Equipment—A portable electric drill with a 2-inch auger and two hundred feet of cable, has been installed as part of the equipment of Fuel Wagon No. 1, Boston Fire Department.

Boston Firemen Praised for Rescue Work—Commissioner Eugene C. Hultman received the following letter from Mayor Nichols praising the firemen for the rescue work at the time when the Boston Elevated Railway had an accident at the Beach street curve: "Please extend to the chief and members of your department, my warm thanks and congratulations for the prompt and heroic service which they performed at the elevated accident. Never, so far as I can remember, has aid come so quickly and so effectively at a time of extreme emergency. The rescue work of the fire department was such as to command the highest admiration and reflects great credit upon the entire department."

Forest Fire Season Is with Us

And new ways are continually being developed to handle the troublesome forest blaze. An air patrol locates a fire, and then the railroad forest fire fighting outfit you see here goes into action.



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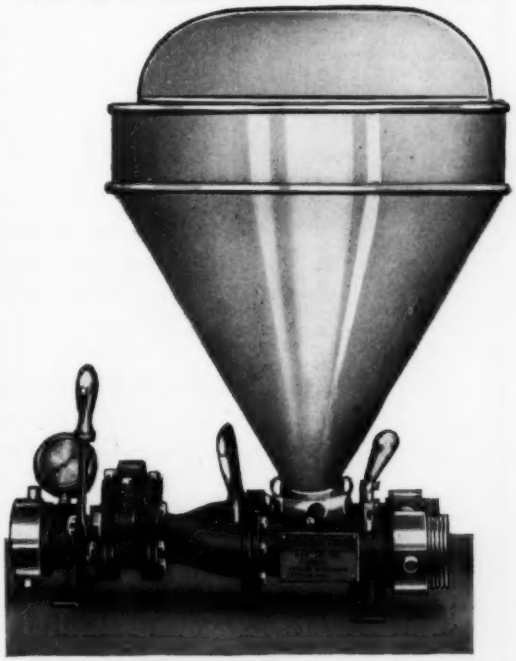

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If a hose salesman can convince you by any argument that his three-year guarantee will result in just as good an adjustment, should one be necessary, as a guarantee for six years, from a reliable company, certainly if you have a goat, he's got it.

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Almost every page contains the offer of some product or service that you would find of value in your department. It will pay you to read the advertising pages as carefully as you do the editorial.

"The wise man is he who is always willing to learn." It will pay you to read the advertising pages carefully.

THE PUBLISHERS.

FIRE DEPARTMENT ACTIVITIES

Kankakee, Ill., Rejects Bids—All bids submitted for supplying fire apparatus to Kankakee, Ill., have been rejected.

Pumper Delivered to Butterfield, Minn.—A pumper has been delivered to Butterfield, Minn.

Toledo, Ia., Buys Apparatus—Toledo, Ia., has purchased a 500-gallon pumper for $6,400.

Stoughton, Mass., Accepts Pumper—Stoughton, Mass., has tested its new 500-gallon pumper and has found it satisfactory.

New Station Opened in Altadena, Cal.—A new fire station has been formally opened in Altadena, Cal.

Fire Association Organized in Brevard—The Brevard County Firemen's Association has been organized in Florida.

Chemical Car Delivered to Lacona, Ia.—A new chemical car has been delivered to Lacona, Ia.

Harrisburg, Pa., to Have New Station—Construction has started on the new fire station for Harrisburg, Pa. The building will cost $19,000 and will replace a frame building.

Brownsville, Pa., Awaits Apparatus—Brownsville, Pa., is awaiting the delivery of its 1,000-gallon Ahrens-Fox pumper which it purchased for $13,500.

Seymour, Ia., Has New Apparatus—The General Manufacturing Co., has delivered a 350-gallon pumper to Seymour, Ia. The equipment is mounted on a Reo chassis.

Morris, N. Y., Will Buy Apparatus—Morris, N. Y., has voted to issue $5,000 bonds to finance the purchase of fire apparatus.

Apparatus Purchased for New Jersey Towns—Gloucester Township, N. J., has purchased three pumpers—one each for Blackwood, Glendora and Chews Landing.

Reading, Pa., Installs New Pumper—A Seagrave pumper has been placed in service with the Junior Fire Company of Reading, Pa.

Vermilion, Ohio, Buys Pumper—Vermilion, Ohio, has purchased a Prospect pumper. The 400-gallon pump is mounted on a Master chassis and carries two forty-gallon chemical tanks.

Frazeysburg, O., Organizes Department—A fire department has been organized to protect the village of Frazeysburg, Ohio. The community has had several bad fires.

Los Angeles to Start on New Station—Work has started by Los Angeles on a fire station in the Hollywood section of the city.

Aledo, Ill., to Receive Apparatus—Aledo, Ill., is awaiting delivery of its Boyer combination pumper and chemical purchased for farm protection.

Band Organized in Pulaski, Va.—A fire department band with forty-two members has been organized by the volunteer fire department in Pulaski, Va.

Dayton, O., to Improve Fire Alarm—Extensions to the police and fire alarm system of Dayton, Ohio, will cost $200,000. Contracts for the work will not be awarded for some time.

Corinth, N. Y., to Have Station—A two-story brick building is being remodeled in Corinth, N. Y., for use as a fire station. It will house the city's new pumper.

Sayville, N. Y., Receives New Apparatus—A Mack combination pumper and ladder truck has been delivered to Sayville, N. Y.

Radio Purchased for Eugene, Ore., Department—Merchants in Eugene, Ore., are contributing to a fund to purchase a radio set for the fire department.

Suburbs Protected by Pump on Truck—A Barton pump has been installed on a light truck to protect from fire the suburbs of Freeport, Ill., which are not incorporated, including farm property.

Dodge County Firemen Hold Tournament—The Dodge County Firemen's Association held their annual tournament in Iron Ridge, Wis. The next annual gathering will be held in Ashippun.

Gillis Chief at St. Cloud, Minn.—John F. Gillis, member of the fire department for twenty-five years, has been named chief of the St. Cloud, Minn., department succeeding Thomas Lacher who resigned.

More Firemen Wanted in Springfield, O.—City Manager Flack of Springfield, Ohio, has recommended that eighteen men be added to the fire department. This improvement will cost the city $29,160 a year.

Paterson, N. J., to Buy Pumper—Paterson, N. J., voted to purchase an Ahrens-Fox pumper for $13,500. The new pumper will be stationed in the People's Park fire house, which is now nearing completion.

More Men Added to New Castle, Pa.—Four firemen have been added to the paid fire department of New Castle, Pa. The force has been enlarged because of the combination pumper and ladder truck that will arrive soon.

Lexington, Ky., to Have New Station—Plans have been drawn for a new central fire station to be erected in Lexington, Ky. It is expected that the building will be completed December 1.

Chicago Fire Department Raising Funds—A series of baseball games have been arranged between fire departments of Chicago and Detroit in order to raise money for the relief organization.

Bad Axe, Mich., Receives Chemical Car—A chemical car carrying four forty-gallon chemical tanks has been delivered to Bad Axe, Mich. A 400-gallon pumper has been delivered several months ago.

Conshohocken, Pa., Celebration Postponed—The No. 2 fire company in Conshohocken, Pa., has postponed the celebration planned in honor of the twenty-fifth anniversary of that company's organization.

Lorain, O., Said to be Undermanned—According to a report issued by the National Board of Fire Underwriters, the Lorain, Ohio, fire department is said to be undermanned by fourteen men, and is in need of additional equipment.

Chief Herring Re-Elected President—Chief Albert Herring of Murphysboro, Ill., was re-elected president of the Egyptian Fire Fighters Association at the annual meeting held in Mt. Carmel. Most of the other officers of the organization were re-elected.

E. Pittsburgh Selected for Convention—At the thirty-fifth annual convention of the Western Pennsylvania Volunteer Firemen's Association held in Meyersdale, the firemen selected East Pittsburgh, Pa., for the 1929 gathering. Harry J. Musser of New Kensington was elected president and C. Becker, Stowe Township, vice-president.

Spokane, Wash., Has Fire Detective—In an attempt to stop the large number of grass fires which have occurred in Spokane recently, acting Chief J. F. Lindsay assigned a lieutenant to investigate the origin of these fires. It is believed that many of the fires were started by boys.

Trenton, N. J., Completely Motorized—With the addition of a new aerial ladder, Trenton, N. J., the city will have four truck companies. The fire department is completely motorized. The old steam pumpers that have been in service for twenty-five years or more, have been junked. The new company known as Truck Company No. 4 will be quartered in fire headquarters.

Fairfield, Conn., to Improve Department—Fairfield, Conn., a suburb of Bridgeport, is taking steps to improve the department. Eight permanent men have been appointed, two new pieces of apparatus have been ordered and construction will start soon on a new fire station. Firemen will receive $1,800 a year.

Missouri Firemen to Meet in Joplin—The annual convention of the Missouri State Firemen's Association will be held in Joplin, September 17 and 18. Two banquets and a tour of the mining fields have been arranged for the entertainment of the firemen. Captain Ira Scott has been appointed chairman of the finance committee.

Charles M. Schwab Wins Convention—Charles M. Schwab, famous steel man, was instrumental in having firemen in that section select Ebensburg as the place for the 1929 convention. Mr. Schwab made a plea for Ebensberg and he gave the association $500 to finance their work. Emil O. Wilkinson of Ebensburg was elected president and A. J. Musser of Barnesboro, secretary.

Commission Aids Firemen in Fight—The Los Angeles Fire commission has assured the firemen of its support in opposing changes in the pension law as suggested by a committee of the California Taxpayers' Association. The changes suggested are that firemen may retire after twenty years service on a pension of $100 a month but the pension is not to be effective until the retired man reaches the age of sixty-five.

PROPOSED IMPROVEMENTS

Charleston, Coles Co., Ill.—City Council authorized the purchase of a piece of fire apparatus, and other fire equipment.

Topsham, Sagadahoc Co., Maine.—Plans are being discussed for the organization of new fire department here and the purchase of fire apparatus.

Fall River, Bristol Co., Mass.—Plans are being made for construction of new central fire headquarters building, at estimated cost of $95,000.

New Castle, New Castle Co., Del.—Good Will Fire Co. have completed plans for proposed new fire station. James V. Campbell, Chief.

Slaton, Lubbock Co., Tex.—Fire station will be erected in near future at a cost of $15,000.

North Chicago, Lake Co., Ill.—Proposal for purchase of four or possibly five new tires for the Ahrens-Fox truck is before the city council.

Lamoille, Bureau Co., Ill.—Purchase of apparatus being considered. Rural district to be included in whatever plans are carried out.

Garwood, Union Co., N. J.—Proposed plans for erection of fire station shelved until later date.

Hicksville, Nassau Co., N. Y.—Proposal for appropriation of $10,000 for fire alarm system will be submitted to voters.

Chemical and Pumper Apparatus Wanted

Borough of Hillsdale, N. J., interested in purchasing a chemical and pumper apparatus. Anyone interested get in touch with Fire Commissioner, Frank E. Hofmann, Bergen county, Hillsdale, N. J.

9-5

Salesman Wanted

Experience in selling fire apparatus, high class product in eastern territory. Salary and commission. Address: Box 157, % FIRE ENGINEERING, 225 W. 34th St., New York City.

9-5

INSPECTION OF BUILDINGS UNDER CONSTRUCTION LOWERS FIRE LOSS

Fire Department Inspection in Small Communities Is Invaluable—Separate Division Looks After Wiring—Builders Often Careless

By WILLIAM RUSSELL

Chief of Fire Service, Toronto, Ont., Canada*

THE city architect of Toronto is also superintendent of building and it is the duty of his department to see that the provisions of the city by-laws are carried out in their entire meaning. This by-law, one would presume, would cover only the erection of buildings in a general way, such as issuing of permits, passing of plans and so forth. It goes farther than that, however, in that it provides for the regulating of fire hazards and requirements of fire fighting equipment in buildings under the jurisdiction of the city. The architect's department is constantly checking up buildings under construction. You can appreciate that it would be quite a problem for me to look after more than eleven thousand buildings which were constructed last year, granting of course that some of them would probably not require much attention, but there would be a large number and they would be spread over a large area. I would have to have a considerably larger number of men if I were to undertake this work, materially increasing the cost of my department and then we would have a dual system of inspection, which, my experience has taught me, is neither satisfactory nor profitable. I am of the opinion that the work is well looked after in Toronto. A fire department inspection would, in small communities, be a great thing. It would provide your men with knowledge of the structures while in process of construction, giving them an insight of the building that is not visible after completion, and also the opportunity of correcting any hazards they may find. As an example, a builder may be using a dangerous open fire for the purpose of drying the walls. A defective salamander may be used, an unfinished fire place may be used by workmen, close to carpenters working at their benches. Probably they neglect to clean up and the fire-place is forgotten. These are things the fire department would immediately notice and correct.

Then we have the hydro electric system looking after the electric wiring. Their inspection is essential and the machinery for doing their work is very good. The chimney flues, smoke pipes and fire containers are governed by the building by-law. Gas installation is made by the gas company, and "safety first" is their outstanding motto. So far as Toronto is concerned, our methods of inspection are satisfactory and the small loss bears ample proof of my statement. I also find that where a building of any size or where a group is under construction, a watchman is employed, whose duty it is to patrol the building during the absence of the workmen. As a general rule, it is found that local improvements have been completed in new districts before any building operations are commenced, thereby giving this department water for combating fire.

In conclusion, I can only say that I do not consider that you can place "Buildings under Construction" in the category of extraordinary fire hazards as my experience, though long in years, has not brought me in touch with conditions that you might call alarming, although I believe it would be worth while for each and everyone of us to check up our local conditions with the view of knowing that everything is being done to avoid loss by fire. There may be some little improvement that you can suggest to your council that would be a further safeguard against fire in unfinished buildings.

*Abstract of paper delivered at Dominion Association of Fire Chiefs, Kingston, Ont.

New Berne, N. C., Has Youngest Chief—It is believed that Chief Albert W. Jody of New Bern, N. C., twenty-eight years old, is the youngest fire chief in the state.

CONVENTION DATES

Sept. 5-6—COLORADO STATE FIREMEN'S ASSOCIATION. 12th Annual Convention and Tournament, Rocky Ford, Col. Secretary, Clinton Turnbull, 303 Jacobson Bldg., Denver, Col.

Sept. 10-11—ARKANSAS STATE FIREMEN'S ASSOCIATION. Annual Convention, DeQueen, Ark. Secretary-Treasurer, H. D. Compton, Central Fire Station, Little Rock, Ark.

Sept. 11-13—ILLINOIS FIREMEN'S ASSOCIATION. 41st Annual Convention, LaSalle, Ill. Secretary, Roy W. Alsip, Asst. Chief, Fire Department, Champaign, Ill.

Sept. 18-19—IOWA FIREMEN'S ASSOCIATION. 51st Annual Convention, Independence, Ia. Secretary, E. E. Parsons, Marion, Ia.

Sept. 18-20—MASSACHUSETTS STATE FIREMEN'S ASSOCIATION. 49th Annual Convention, Hotel Nichols, Haverhill, Mass. Secretary, Daniel J. Looney, 1043 Old South Bldg., Boston, Mass.

Sept. 21-22—NEW JERSEY STATE FIREMEN'S ASSOCIATION. 51st Annual Convention, Atlantic City, N. J. Secretary, William Exall, Chamber of Commerce Bldg., Newark, N. J.

Sept. 21—NEW JERSEY STATE FIRE CHIEFS' ASSOCIATION. Annual Meeting in evening, Atlantic City, N. J. Secretary, Fred A. Trowbridge, 17 South Street, Morristown, N. J.

Oct. 1-5—PENNSYLVANIA STATE FIREMEN'S ASSOCIATION. 49th Annual Convention, Uniontown, Pa. Secretary, Charles F. Clark, 411 Bellevue Avenue, Wayne, Pa.

Oct. 1-6—PACIFIC COAST ASSOCIATION OF FIRE CHIEFS. 35th Annual Convention and School of Instruction for Firemen, Sacramento, Cal. Secretary, State Fire Marshal, Jay C. Stevens, Merchants' Exchange Bldg., San Francisco, Cal.

Oct. 9-10—MISSOURI VALLEY ASSOCIATION OF FIRE CHIEFS. Annual Convention (tentative date). Secretary, Chief Ray Tiller, Waterloo, Ia.

Oct. 9-11—RAILWAY FIRE PROTECTION ASSOCIATION. Annual Convention, Hotel Gibson, Cincinnati, Ohio. Secretary-Treasurer, R. R. Hackett, 1207 B. & O. Bldg., Baltimore, Md.

Oct. 11-12—GREAT LAKES ASSOCIATION OF FIRE CHIEFS. Annual Convention (tentative date). Secretary, Chief Frank C. McAuliffe, Chief of Patrols, 100 Desplaines St., Chicago, Ill.

Oct. 15-17—EASTERN ASSOCIATION OF FIRE CHIEFS. (Eastern Division, I. A. F. C.) First Annual Convention, Bellevue-Stratford Hotel, Philadelphia, Pa. (Just preceding I. A. F. C. Convention.) Secretary, T. Howell Johnson, Room 602, Chamber of Commerce Bldg., Newark, N. J.

Oct. 17-20—INTERNATIONAL ASSOCIATION OF FIRE CHIEFS. 55th Annual Convention, Bellevue-Stratford Hotel, Philadelphia, Pa. Exhibits at Second Regiment Armory. Secretary, Chief James J. Mulcahey, Yonkers, N. Y.; Executive Secretary, Jay W. Stevens, Merchants' Exchange Bldg., San Francisco, Cal.; Chairman, Exhibits, Chief August Gerstung, Elizabeth, N. J.

Oct. 22-24—KANSAS STATE FIRE CHIEFS and FIREMEN'S ASSOCIATIONS and WOMEN'S AUXILIARY. 13th and 42nd Annual Conventions and 3d Meeting, respectively, Liberal, Kan. Secretary, Chief K. D. Doyle, Wamego, Kan.

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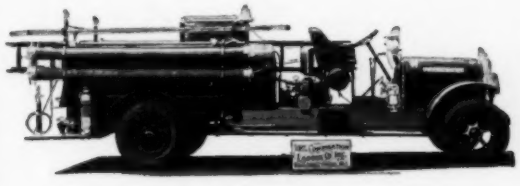

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A complete ball-bearing motor. Electric Siren that will not run down your battery. Our SIRO-DRIFT uses about two seconds of current out of every sixty. Clutch between Siren and motor that will start an automobile. One trial of a SIRO-DRIFT means one hundred per cent equipment.

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We have a new special Friction Drive Siren for the new Ford.

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MANUFACTURED BY
B and M SIREN MANUFACTURING CO.
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FALSE ALARMS

MAYBE HE WENT

The Springdale Volunteer Fire Department was giving their annual show in order to raise funds with which to maintain the organization. As is usual with all amateur shows, there was considerable excitement. One patron sat down in the wrong seat and refused to move. A fireman who was usher for the evening was called. He said:

"I am sorry, sir, your tickets are not for row M. Will you please vacate these seats and go to L."

A SAFE SIGN

The chief was being given a farewell party by the Chamber of Commerce president just before he started on his thirty day vacation leave.

"Have a drink, chief," said the host, "it's good stuff."

"What makes you so sure that the stuff is good?"

"Well, my bootlegger told me when I bought it that I could pay him later."

A Scotchman recently sued the fire department because he was hurt while watching the firemen's baseball team play the police department. He fell out of a tree.

EQUAL RIGHTS

One town was determined to end the trouble caused by motorists following too closely behind fire apparatus. That's how it happened that Oscar was so unlucky as to be caught and fined two dollars in court. Oscar and his friend left the court together, the former very much angered.

"What's the use raving," said his friend. "You know that you followed the fire apparatus and you should consider yourself lucky to be fined only two dollars."

"It's the principle of the thing that gets me sore," replied Oscar. "The other night I gave the captain on the apparatus a ride all the way home."

REASONABLE ENOUGH

A fireman on the apparatus floor paused in his polishing long enough to look up and see a car decorated with forty different pennants, stop in front of the fire house. The fireman rushed out.

"You can't park here."

"That's all right," replied the tourist, "I just want to park here long enough and look around for a place to park."

CAME TOO LATE

Mac was just unlucky enough to fall down an open chute at a department store fire. He was taken to the hospital where it was learned that his temperature was high. The next morning the house physician called at Mac's bedside for the usual examination. The doctor was pleased.

"Well young man, you have no temperature this morning.

"That's right, doc," said Mac, "the nurse took it last night."

In Biblical days, it was customary to anoint the head with oil. But they didn't do it by crawling under the motor car.

FULLY EXPLAINED

A sight-seeing guide on a "rubber-neck" wagon in Portland, shouted his usual talk:

"And ladies and gentlemen, on your right you see a monument erected by the fire department for a very noble cause—"

He was interrupted by an inquisitive old lady who asked:

"And what does it stand for?"

The guide replied sarcastically, "Because it would look silly lying down."

NOT THAT LARGE

When the firemen rolled back with the ladder truck, the men were all excited because Tom had run over a dog. The story reached the captain.

"When you run over a dog doesn't it upset you, Tom?" questioned the officer.

"No, captain. I've never hit one as big as that."

NOT SPECIFIED

Cedarville sold its old truck to a smaller neighboring community. One condition of the sale was that the town was permitted ten days free trial.

At the end of that time, the machine was returned.

"What's the matter with it that you returned the truck?" asked Cedarville's chief.

"Well you see," said the firemen not knowing exactly how to state conditions, "every blame part of that truck makes a noise but the bell."

There was once a cynic who thought he knew everything that was going to happen at a picture show. But he was wrong. One night the theatre caught fire.

TRIAL BY EQUALS

During an arson trial, the farmer of the adjacent farm was called to testify. As common with most farmers, he was very cagy on the stand, and the lawyer asked if he was acquainted with any of the jury.

"Yes sir," replied the witness, "more than half of them."

"Are you willing to swear that you know more than half of them?" asked the lawyer.

The witness thought for a moment.

"If it comes to that," he replied, "I am willing to swear that I know more than all of them put together."

Many a good looking fireman has a friend he would never think of inviting home for dinner.

NO HARM DONE

Some of the city officials had gathered for their morning conference. One of the councilmen said:

"Mayor, I hear that the deputy commissioner is talking of going to the fire chiefs' convention in Philadelphia. Have you any objections?"

"No, certainly not. Let him talk."

Drawing by "Art" Espey

Firemen's Picnics Raise Havoc With the Department

Fire-fighting and playing the role of ladies' man are vastly different tasks. But as long as it will be necessary to hold firemen's picnics to raise money for the department, it will be necessary for the firemen to coordinate both. Just prior to such an event, it is not uncommon to see some big-footed fire-fighter learning the rudiments of walking around a dance floor to music. And if you think it's easy (providing you don't know how to dance), why, just try it.

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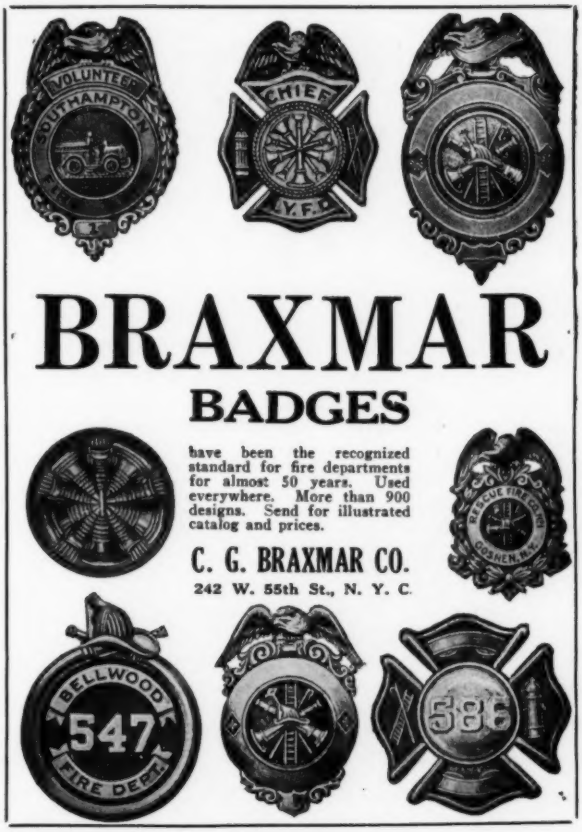

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FIRE ENGINEERING
225 W. 34th St., N. Y. C.

Your Catalog Page

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1 Acid Siphons.
2 Adaptors for Changing Hydrant Threads.
3 Acid Jars and Rings.
4 Aerial Ladders, Detachable.
5 Aerial Trucks.
6 Alarms, Siren, Electric.
7 Alarm Systems, Industrial.
8 Alarm Systems, Municipal Telegraphic.
9 Alarms, Thermostatic.
10 Asbestos Clothing.
11 Badges, Insignias, Buttons, etc.
12 Banners, Trumpets, etc.
13 Battery Jars.
14 Battery Zincs for Fire Alarm Batteries.
15 Bells, Fire Alarm, Municipal.
16 Body Equipments.
17 Boxes, Gongs, Reels, Registers, Fire Alarm.
18 Brakes, Air.
19 Brake Linings.
20 Brooms, Fire.
21 Building Materials, Fire Retardant.
22 Caps, Firemen's.
23 Chains, Non-Skid, Fire Apparatus.
24 Chassis for Fire Apparatus.
25 Chemical Engines and Tanks.
26 Chimney Cleaning Compounds.
27 City Service Trucks.
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29 Combination Chemical & Hose Cars.
30 Cutting & Welding Equipment, Blow Torch.
31 Cutting & Welding Equipment, Electric.
32 Deluge Sets.
33 Door Openers, Fire Station, Automatic.
34 Extinguishers, Fire, Soda & Acid.
35 Extinguishers, Fire, Tetrachloride.
36 Extinguishers, Fire, Foam.
37 Extinguishers for Chimney Fires.
38 Fire Boat Nozzle Equipment.
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42 Fire Alarm Posts.
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47 Flashlights, Hand.
48 Foam Liquid for Extinguishers.
49 Gas Masks and Respirators.
50 Gas & Smoke Helmets.
51 Gasoline & Oil Handling Equipment.
52 Goggles, Firemen's.
53 Helmets, Metal, etc.
54 Hose Carts, Reels & Racks.

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Whenever you are in the market for new equipment you naturally want to get complete information from all reliable manufacturers before you place the orders for your department.

This page is a feature of every issue to make it convenient for you to get all this information without cost to you and without placing you under any obligation whatever to buy from any particular manufacturer.

You only have to run down the list of equipment and mail in the coupon below with your name and address and the numbers that indicate what you are interested in and we will then have the leading manufacturers of this equipment send you complete information direct—so why not let us help you get what you want? We are glad to be of service. Help yourself.

For Information on Any Equipment Not Listed, Write on This Page or Use Separate Sheet.

55 Hose Clamps.
56 Hose, Fire.
57 Hose, Chemical.
58 Hose Holders.
59 Hose Jackets.
60 Hose Standardization Tools.
61 Hydrant Draining Pumps.
62 Hydrants, Fire.
63 Jacks for Fire Trucks.
64 Jacks, Shoring & Prying.
65 Ladders, Fire.
66 Lightning Arresters.
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